

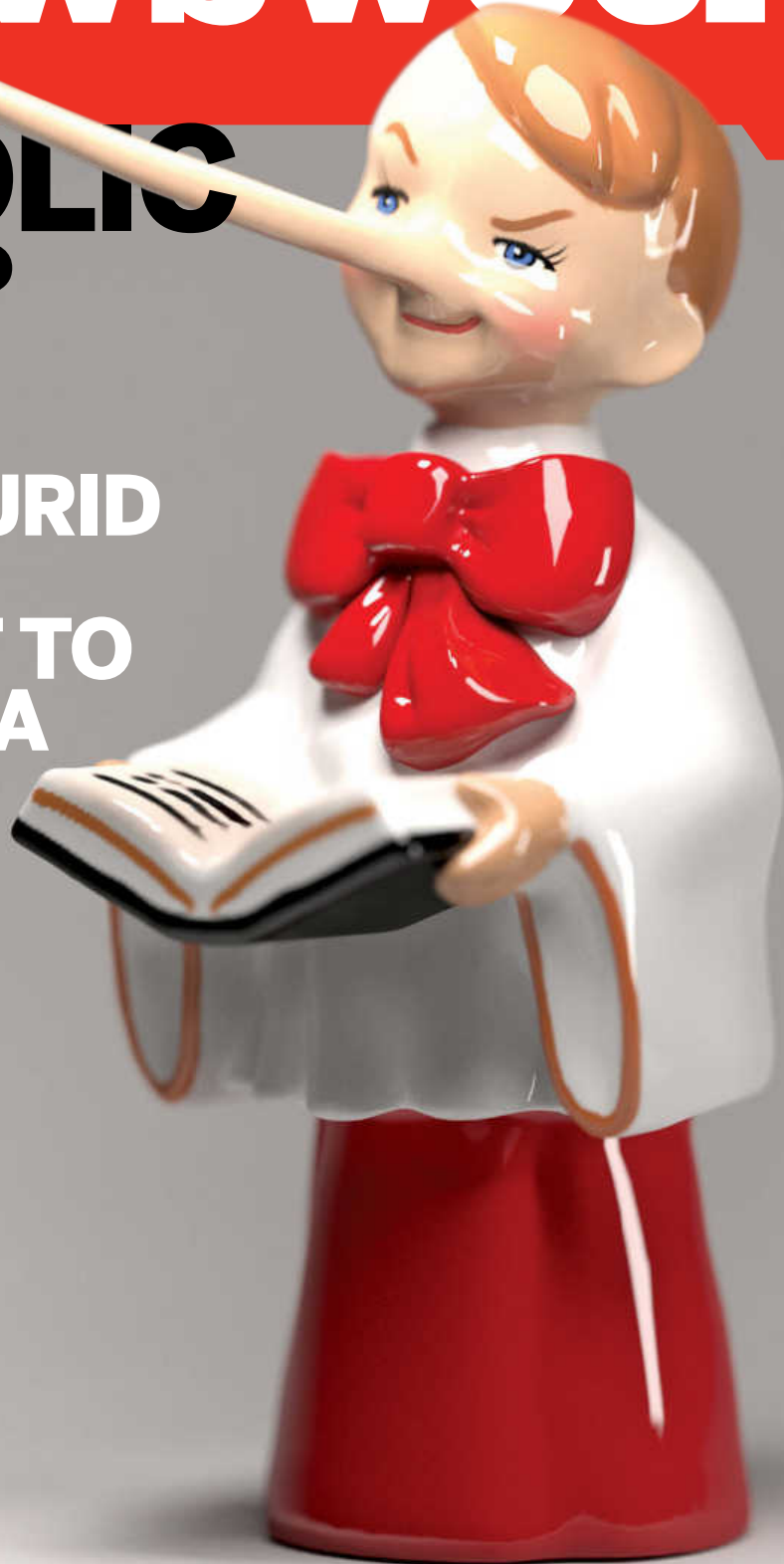
What China's Economic Slowdown Means
for the Rest of the World

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01.29.2016

CATHOLIC GUILT?

HOW FOUR
MEN IN A LURID
RAPE CASE
WERE SENT TO
PRISON BY A
SCHEMING
ALTAR BOY



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01.29.2016 / VOL. 166 / NO. 04

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How four men in a lurid rape case were sent to prison by a lying, scheming altar boy. *by Ralph Cipriano*

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Syria's White Helmets live (and often die) by the motto 'to save one life is to save humanity.' *by Janine de Giovanni*

COVER CREDIT: ILLUSTRATION BY WESLEY BEDROSIAN

Newsweek (ISSN0028-9604) is published weekly except one week in January, July, August and October. Newsweek is published by Newsweek LLC, 7 Hanover Square, 5th Floor, New York, NY 10004. Periodical postage is paid at New York, NY and additional mailing offices. POSTMASTER: Send change of address to Newsweek, 7 Hanover Square, 5th Floor, New York, NY 10004.

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BIG SHOTS

INDONESIA

ISIS in Asia

Jakarta, Indonesia—Police take cover as they pursue suspects after a series of bombs killed at least two people and wounded 24 others on January 14 in the capital city of the world's most populous Muslim country. The Islamic State militant group (ISIS) claimed responsibility for the attacks, and Jakarta's police chief, Tito Karnavian, said those responsible took their orders from an Indonesian named Bahrin Naim, who is believed to be in Syria. Two of the attackers died in suicide bombings, and the other three were killed by police.



BAY ISMOYO





USA

Sunshine President

Joint Base Andrews, Maryland—President Barack Obama arrives home aboard Air Force One after a town hall meeting in Baton Rouge, Louisiana, on January 14. After his final State of the Union speech, the president pledged to spend more time meeting Americans face to face. Republicans criticized Obama's portrayal of the state of the country as overly optimistic and slammed him for not mentioning the 10 U.S. Navy personnel briefly detained by Iran after they strayed into Iranian territorial waters in the Persian Gulf. After a flurry of diplomatic phone calls, Iran released the sailors unharmed.



CARLOS BARRIA









SYRIA

Starved

Madaya, Syria—A girl crosses a road as an aid convoy waits to enter the town on January 11. “U.N. teams have witnessed scenes that haunt the soul,” U.N. Secretary-General Ban Ki-moon said after convoys reached the town, where Syrian government forces are conducting a siege affecting 42,000 people. “The elderly and children, men and women, who were little more than skin and bones: gaunt, severely malnourished, so weak they could barely walk and utterly desperate for the slightest morsel.” Ban said the use of starvation as a weapon is “a war crime.” At least 32 people have starved to death in the past month, according to UNICEF.



LOUAI BESHARA

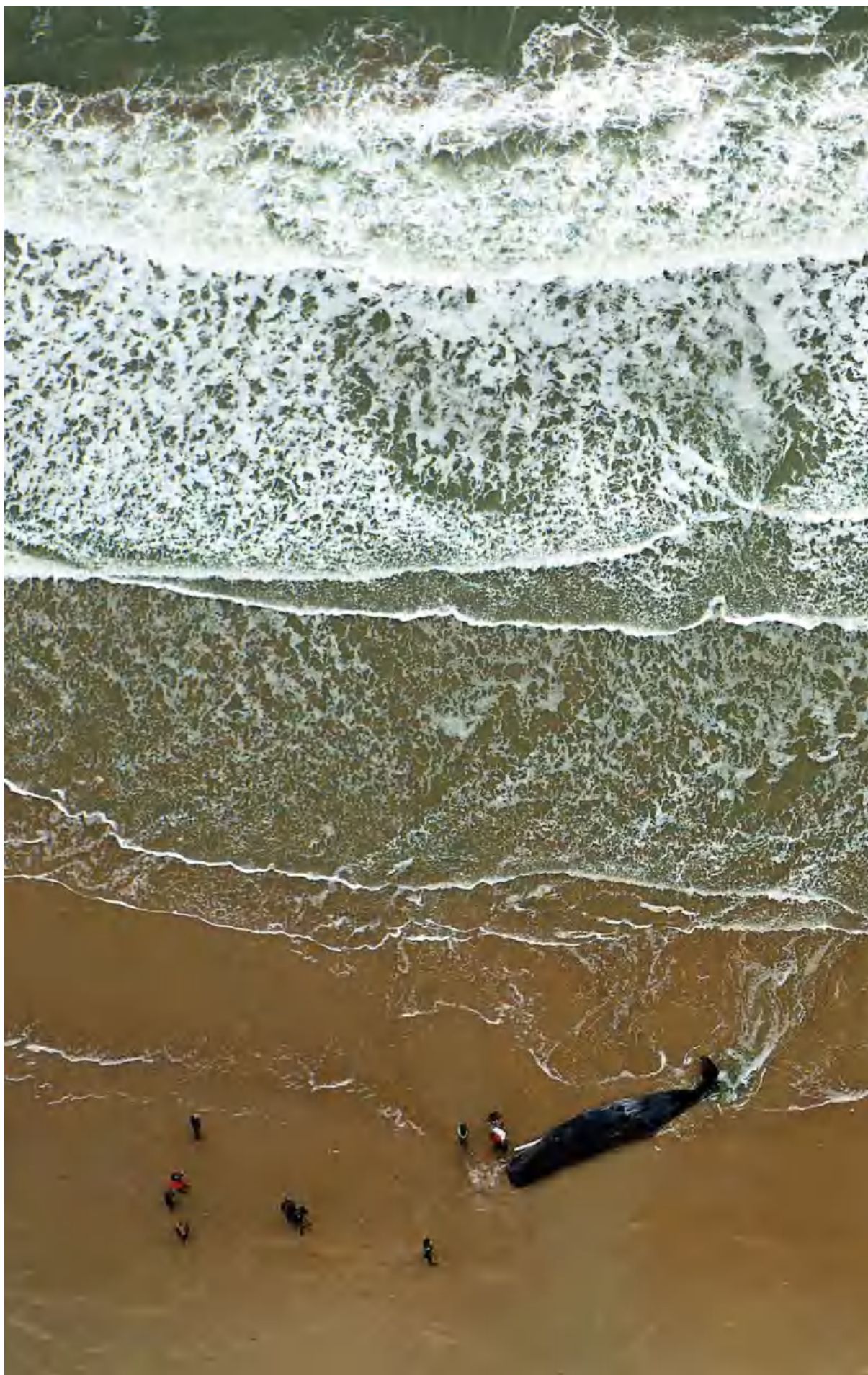
THE NETHERLANDS

North Sea Ailing

Texel Island, the Netherlands—Three out of five beached sperm whales lie on a shoreline on January 13; all died after being stranded for several hours. According to the Royal Netherlands Institute for Sea Research, a group beaching is especially rare in the Netherlands, as the North Sea is too shallow for the deep-diving mammals. Sperm whales can measure up to 60 feet and weigh up to 50 tons. Officials are investigating what caused the whales to be stranded. In the same week, dozens of short-finned pilot whales were beached in Tamil Nadu, India, and at least 73 died.



CRIS TOALA OLIVARES







P A G E O N E

POLITICS

~~OIL~~

WEST BANK

GERMANY

RUSSIA

ENVIRONMENT

OIL AND TROUBLE IN CHINA

The West got a pass in the last Asian financial crisis. Not this time

HISTORY DOESN'T repeat itself, Mark Twain supposedly once said, but it sure does rhyme sometimes. In 1997, once vibrant emerging markets in Asia began toppling one by one. Currencies cracked. International credit markets came under intense pressure. Oil prices plunged as the Asian financial crisis spread to Russia—which defaulted on its debt—and other parts of the former Soviet Union. Through it all, the largest economy in the world, the United States, sailed on almost unperturbed. Its gross domestic product continued to increase at a rate that many economists now believe is unattainable—more than 4 percent per year—even as growth slowed in the developed economies of Western Europe.

Nearly two decades later, with China sending shockwaves through global stock markets, the tune sounds familiar. But it's important to pay attention not to the similarities between then and now but to the *differences*. First and most obvious, as Ruchir Sharma, head of emerging markets and global macro strategy at Morgan Stanley, pointed out in a January 13 essay in *The Wall Street Journal*, is the share of global GDP

that China now claims and the country's role in driving markets worldwide. Beijing has become the second biggest economy on the planet and has been for several years now the largest contributor to global economic growth.

Beijing's period of supercharged advancement is now over, as anyone in the business of selling oil, copper or any other commodity could have told you for at least the past year. The stunning drop in global commodity prices has been driven not only by the marked slowdown in China's overall growth but also in the composition of that growth. The massive build-out over the past decade of both infrastructure and residential real estate is no longer the catalyst for China's economy.

China's hyper-growth phase—and in particular the period after the 2008 financial crisis, from which it emerged without an apparent scratch—gave its economic planners a reputation for extreme competence. They seemed to know all the right policy levers to pull. *New York Times* columnist Thomas Friedman made the controversial argument that it might be good to be “China for a day.” As a citizen of the

BY
BILL POWELL





+
DRILL, BABY, DRILL:
After the lifting of
sanctions over its
nuclear program,
Iran is expected to
ramp up production
of oil and gas. But
Saudi Arabia has
kept prices low, so
Iran won't earn as
much as it hoped.



inefficient, messy democracy that is the United States, he pined for the authoritarian wisdom emanating from Beijing.

To a large extent, the exalted reputation was undeserved. Prior to the crisis, the economic path China trod was well-worn: an export- and investment-led strategy that Japan, South Korea and Taiwan (among others) had implemented in the past. Then, post-crisis, China simply threw money at the economy—and piled up huge debts that are now coming due.

These thoughts—that China is slowing more rapidly than we thought and isn't as smart as we believed—have now gripped global financial markets. Beijing's ham-handed response to two successive stock market swoons—one last summer and the latest just as the new year began—has been unsettling. In the most recent episode, Beijing insisted on allowing so-called circuit breakers to halt trading on two separate trading days, only to come to the understanding that the halts increased investor panic. The circuit breakers are now gone.

In theory, markets in the outside world shouldn't react as violently as they now do to what happens in China's equity markets. Chinese stock markets are not widely tradable abroad, and they do not tell investors much about the health of the Chinese economy in the way markets do in the developed world. China's two main bourses still tend to be traders' markets driven by rumors and guesses as to what the government wants the market or the economy to do, as opposed to investors' markets driven by fundamental economics. But Beijing's unsteady policy hand has freaked out investors—and will continue to do so. "The combination of inexperience, inappropriate guidance and an instinct to intervene based on unwillingness or inability to accept volatility is potentially very damaging," says Michael Pettis, a professor of finance at Beijing's Peking University. "It can only increase volatility in all financial markets, [and] there is no reason to assume that anything will change for the better during 2016."

Another factor conjuring memories of the 1997 Asian crisis is the management of China's currency, the renminbi. China has allowed it to weaken slightly against the U.S. dollar in recent months, after a prolonged period of relative stability. As Pettis wrote recently, this has increased fears globally that other countries will devalue their currencies to keep up with each other on exports, a move that would be hugely destabilizing. With the Mexican peso, the most widely traded emerging market currency, already under pressure, Mexico's finance minister, Luis Videgaray, said, "There is real concern that the public policy response [to China's economic weakness] will be to start a round of competitive devaluations" in an effort to boost exports.

This may be unfair. China has moved, with the approval of the International Monetary Fund, to align its currency not with the U.S. dollar but rather with a basket of currencies. This as much as anything accounts for the renminbi's recent weakness against the dollar. And in the last two months, far from guiding the renminbi lower, the government has been intervening to prevent what might be a much sharper, market-led sell-off against the dollar, as even more capital flows out of China as the economy weakens. (In the

CHINA SIMPLY THREW MONEY AT THE ECONOMY—AND PILED UP HUGE DEBTS THAT ARE NOW COMING DUE.

last quarter of 2015, investors took \$367 billion out of the country, an amount, as Bloomberg reported, greater than Greece's GDP.) Expect that policy to continue.

Many emerging market currencies are under pressure—just as they were nearly 20 years ago—but the reason this time is different. Currencies in Mexico, Russia, Nigeria, Kazakhstan and Azerbaijan, to name a few, have all plunged—some to record lows—against the dollar in recent weeks. What do they have in common? They are all countries whose economies depend heavily on oil exports. They are casualties in what has been for more than a year now an economic war between Saudi Arabia—the world's largest oil exporter—and its geopolitical archenemy, Iran, a major oil producer now looking forward to the removal of sanctions, which will enable it



IF YOU BUILD IT:
China's economy
has surged in re-
cent years as con-
struction and real
estate boomed.
Now a slowdown
in those sectors
has sent commod-
ity prices into a
global slump.

to export more oil legally. The result of this war has been an oil price decline that has surprised most analysts but has not reached its low.

Saudi Arabia—with a largely Sunni Muslim population—is in the midst of an intensifying proxy war against Shiite Iran as the two vie for regional hegemony. That war is taking place in Syria, in Yemen, in Iraq—and in the global crude oil market. The economically rational thing to do for Saudi Arabia, the lowest-cost oil producer in the world, has been to cut production to support prices as demand from China and elsewhere waned. This, indeed, is what Riyadh has done in the past in periods of pronounced price weakness. Instead, the Saudis have done the opposite. As Mark Dubowitz, executive director of the Foundation for the Defense of Democracies, points out, Saudi production rose from 9.6 million barrels per day in November 2014 to 10.2 million barrels per day a year later. In early January, the kingdom announced budget cuts to its normally coddled population to cope with low prices.

Over a year ago, intelligence and diplomatic sources in the Middle East told *Newsweek* that this would be part of Saudi Arabia's conflict with Iran. According to Dubowitz, with oil at \$37 per barrel—seven dollars more than the price of

Brent crude in mid-January—Iran would have to sell 7.5 million barrels of crude a day to return to its level before the economic sanctions. How much oil does the International Energy Agency believe Iran will produce six months after the sanctions are lifted? Slightly more than 3.5 million barrels per day. Iran's national budget last year was based on oil fetching more than \$70 a barrel. Iran, in other words, likely faces budget cuts, thanks to its enemies in Saudi Arabia.

The precipitous decline in the price of oil has unnerved financial markets in the U.S., Europe and elsewhere. The U.S. shale oil revolution drove growth and job creation for years, and now that's unwinding. U.S. oil producers, unlike the Saudis, are shutting down wells in response to the crash. There is also the specter of upheaval in the junk bond market—which has heavy exposure to the shale oil business in the U.S. Analysts expect an increasing number of companies in the oil patch will be unable to service their debts. But as long as the Saudis persist in deploying their oil-price weapon, those production cuts won't affect the global price of a barrel.

Conventional economic thinking has always had it that lower oil prices benefit countries that consume a lot of crude, because that puts money in consumers' pockets—money that they then spend. And that mostly has been true. This time, though, there is evidence that the American consumer is pocketing rather than spending the savings—a sign of enduring fragility in an economy that can't seem to grow beyond 2 percent per year, the same rate that much of Western Europe has maintained for a long time.

If that is true, it's a problem. The U.S. consumer has always been the key prop under the domestic and the global economy. But, as Peking University's Pettis puts it, "if all of this [economic] uncertainty causes the savings rate to rise—not just in China but everywhere else too—our problems are compounded. The last thing we need is for even weaker demand, but it looks like we're going to get it." If he's right, then the biggest difference between the Asian crisis of the '90s and the one now unfolding will be clear enough: This one won't miss the rest of us. ■





GHOST TOWN

An environmental nightmare in Southern California is driving out residents and destroying the atmosphere

IN THE WINTER of 2008, a *Los Angeles Times* real estate column profiled Porter Ranch, a collection of subdivisions in the San Fernando Valley that feels utterly removed from the huge city on whose northern edge it lies. The neighborhood is “graced with lush parks,” the *Neighborhoodly Advice* column gushed, and “attracts residents seeking sanctuary from the urban hubbub.”

Until very recently, you would have had to do a considerable amount of Internet sleuthing

to discover that Porter Ranch, home to 30,000 people, is not the pristine, quasi-rural paradise promised by its developers and boosters. The hills that frame its Instagram-ready backdrop also cradle the Aliso Canyon Storage Facility, where the Southern California Gas Company turned 115 defunct oil wells into an underground warehouse that can hold 80 billion cubic feet of natural gas. On October 23, workers discovered a 7-inch casing in one of those wells had

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+
EFFLUVIA: Officials estimate that they will have the leak at the Aliso Canyon facility plugged in March, six months after it started spewing gas.

ruptured, and that well has been continuously pouring methane into the atmosphere, at a peak rate of 60,000 kilograms per hour (the rate of loss has been reduced since then). A counter on the website of the Environmental Defense Fund estimates that, as of press time, the total loss has been more than 79,000 metric tons of methane sent into the air above Los Angeles.

Methane (CH₄) traps about 85 times more heat radiation than carbon dioxide, when the two are compared over a 20-year span, making it a much more potent factor in climate change. According to the Environmental Defense Fund, the Porter Ranch methane leak was equal in mid-December to emissions of six coal-burning plants or 7 million new cars on the road. Despite its green image, California is second only to Texas in its contribution to the United States' carbon footprint, and the Porter Ranch leak is believed to be adding 25 percent to the state's daily methane output.

As for the much-touted serenity of Porter Ranch, that's also gone. Methane is not a killer on the order of carbon monoxide, but it can cause a variety of chronic ailments, including bloody noses, headaches, vomiting and rashes. A compound called mercaptan is routinely added to methane in order to alert a household of a leak, since methane is colorless and odorless—sulfurous mercaptan is so noxious, you have no choice but to pay attention. To live in the methane effluvium has been an experience ranging from unpleasant to excruciating. Thousands of families have left, spending their winter holidays in hotel rooms or rentals (SoCalGas is paying). They do not know when they will come back, since SoCalGas does not know when the leak will be plugged. It might be late February, but it could be late March.

"We are not refugees living in tents," says Matt Pakucko, acknowledging the community's relative affluence. "But this shouldn't happen." He says SoCalGas and public officials have turned him and his fellow residents into "guinea pigs," and poses a question that must haunt many others here: What else is going on in that hill?

BOOTS AND COOTS

Porter Ranch started appearing with some frequency in the headlines just as world leaders convened in Paris for a landmark climate change conference in late November. Since then, the sense of crisis has only deepened. Two schools are closed. Businesses are suffering because residents are leaving: About 2,500 families have relocated and another 1,800 are on their way

out. On December 5, California Governor Jerry Brown declared a state of emergency.

Gas, though, is impervious to declarations—and the leak in the well known as SS-25 seems to be especially intractable. SoCalGas called in experts at Boots & Coots Services, the Halliburton subsidiary considered the best in the world at killing wells, but they couldn't kill this one. For now, the best solution is to drill a relief well into the 8,700-foot-deep sandstone cavern that holds the gas and then plug SS-25 with cement. That will take at least two months.

In mid-December, the Paris talks concluded with an accord that would urge—though not force—major polluters like the United States and China to radically curb their greenhouse

THERE'S A NO-FLY ZONE ABOVE PORTER RANCH BECAUSE "FUMES FROM THE GAS LEAK COULD BE IGNITED FROM THE AIR."

emissions. "Whatever they agree to in Paris, it's not enough," Brown said before heading to the summit. He has ambitiously pledged to decrease his state's greenhouse emissions by 40 percent of 1990 levels by 2030, which he can do only by weaning the state off carbon.

The methane leak in Porter Ranch, though, is an apt demonstration of our complex affair with carbon fuels. The natural gas stored in Aliso Canyon flows to the homes of about 20 million customers in the greater Los Angeles area. So while we contemplate wind farms and solar arrays, we remain married to an antiquated infrastructure that lets us do what we have done for centuries: extract energy by burning carbon.

A FIRE THAT LASTED SIX DAYS

The SS-25 leak is not the first accident in Aliso Canyon. There was a well blowout in 1968 that led



to a fire that lasted six days, and there was another fire in 1975. Back then, though, there was no Porter Ranch. The fate residents most fear is the one that visited Hutchinson, Kansas, in 2001. Methane that leaked from an underground cavern there caused an explosion that killed two people and forced many residents to evacuate. “In this case the injected material had done everything that scientists usually describe as impossible,” ProPublica reported in a recent article. “It migrated over a large distance, traveled upward through rock, reached the open air and then blew up.”

Aliso Canyon is the fifth-largest gas storage facility in the United States. There are 400 such underground natural gas warehouses across the country, found in depleted reservoirs in oil and natural gas fields, aquifers and salt cavern formations, according to the federal Energy Information Administration. Many are clustered in the Midwest, as well as along the Gulf of Mexico. The federal government leaves much of the oversight of these underground facilities to the states. In Louisiana, a salt cavern collapsed in the rural community of Bayou Corne, creating an enormous sinkhole that released methane.

Underground storage is “absolutely a crucial part of the gas infrastructure in this country,” says Sally Benson, who runs an energy storage lab at Stanford University. By allowing utilities to keep vast reserves of gas, she says, these underground facilities account for the “mismatch between supply and demand” in energy markets. “It really works very well most of the time,” Benson says of the technology that allows for gas to be injected into, and drawn from, subsurface chambers. However, she shares a worry of many in Porter Ranch as they deal with the mundanities of the leak: that the gas plume will somehow become ignited. “They’re really fortunate that this one hasn’t caught fire,” she says. “They better stop it quickly.” The Federal Aviation Administration has imposed a no-fly zone above Porter Ranch “out of concerns that fumes from the gas leak could be ignited from the air.” Rodger Schwecke, a SoCalGas vice president now heading recovery efforts at Porter Ranch, says workers near the relief well are taking every precaution, not using their cellphones and working with brass hammers, which don’t spark when struck.

SPEWING LIKE A BLACK GEYSER

Although SS-25 ruptured in October, it was not until the last days of 2015 that the rest of the world started paying attention. Methane is invisible, which robs the disaster of the doomsday imagery that photo editors and TV news producers crave. And though it adds significantly to

THEY’VE BEEN GASLIGHTED: Alexandra Nagy discusses a plan to shut down the Aliso Canyon facility with fellow Porter Ranch residents, including Matt Pakucko, center right.



the greenhouse gases trapped in Earth’s atmosphere, that is also invisible. In other words, Porter Ranch was a disaster without an audience.

That started to change on December 9, when activists from the environmental groups Earthworks and Food & Water Watch released a video taken with an infrared camera capable of capturing invisible gasses. In the video, a black plume moves continuously over the hills, as if an immense fire were burning somewhere on the horizon. Another infrared shot is from above, showing the plume spewing like a black geyser.

Ten days after that video appeared on YouTube, environmental activist Erin Brockovich called Porter Ranch “a catastrophe the scale of which has not been seen since the 2010 BP oil spill.” Brockovich—who became famous for exposing the chromium-tainted water in Hinkley, California—is especially adept at getting publicity.



Sure enough, her comparison of Porter Ranch to Deepwater Horizon was the irresistible storyline the Internet craved.

"This isn't a one-day thing for the people that live here," Brockovich says. She believes the nosebleeds, coughs and headaches residents have experienced could presage more serious health problems that might take years to manifest, echoing the anxiety voiced by Pakucko about being turned into a public health experiment. "We need to know what's in the air," she says.

A SADLY IRONIC FEEDBACK LOOP

One night, I went to a meeting of the Porter Ranch Advisory Committee at one of the two schools that had recently been closed. It was unsettling to drive on such empty streets in what was still, by map and law, the city of Los Angeles. Never have I yearned so much for just a little traffic, the slightest sign of life. But the streets were empty, hauntingly so.

The meeting was in the school's library, which seemed perverse—all this talk of methane explosions amid picture books for 7-year-olds. Three or four exhausted-looking SoCalGas employees were on hand, but nothing they said could appease the residents of Porter Ranch because the gas was still leaking, the air still reeked of rotten eggs, and the only thing these harried people wanted was for it all to stop. A tray of cellophane-wrapped sandwiches went untouched.

"Does this kind of leak rewrite the rules on operating a gas well?" asked Issam Najm, who runs a water-quality testing company. Paula Cracium, who heads the Porter Ranch Neighborhood Council, sounded a little bit more conciliatory. "The work we do here is going to impact the entire country," she said. One does want to believe that.

The next day, I met Pakucko in Bee Canyon Park, in a community directly east of Porter Ranch that is called Granada Hills. SoCalGas denied my request to visit SS-25, but Pakucko said we could at least get a good view of the relief well if we hiked to a nearby hill. The path began steeply and never really flattened out, heading toward the darkening sky. Behind us lay Los Angeles, surrounded by mountains and frosted with haze. The smog of Los Angeles has been the butt of many cheap late-night jokes, but the city is among the worst polluters in the nation, and the smog is the visible evidence of that despoliation. Though unseen, the methane spewing from Porter Ranch vastly exacerbates the problem. As for the effects of all that climate change, it was in evidence all around us as we ascended the canyon's side, with dry brush



crackling with each gust of wind. The California drought is thought to have been deepened by human activity that led to global warming. Now, with the recent leak, Aliso Canyon was causing its own future desiccation, a sadly ironic feedback loop.

Finally, the relief well came into view, nestled into the side of a hill. We could hear it too, a high whine like a dentist's drill in the next room. The winds shifted with the setting sun, and I got my first smell of Eau de Porter Ranch. It's the smell of gas escaping from a stove, except we were in the wilderness, and there was no knob to turn. We lingered in the dusk, trying to reconcile the surrounding beauty with the catastrophe unraveling several hundred yards away. By the time we descended, it was fully dark. At one point, a pack of coyotes started yapping behind us, and Pakucko urged me to find a large stick. I could not tell if he was joking.

Los Angeles was now entirely blanketed by darkness, but I could see the freeways, ribbons of light weaving through the mountains,

PORTER RANCH IS "A CATASTROPHE THE SCALE OF WHICH HAS NOT BEEN SEEN SINCE THE 2010 BP OIL SPILL."

as some of the 5.8 million cars of Los Angeles County deposited vapor trails of carbon dioxide into the atmosphere. The lights were on in houses across the San Fernando Valley, and because it was an especially cold night, many of the city's 3 million households drew natural gas, probably from Aliso Canyon. There's nothing quite like the pleasure of a warm house fortified against the winter chill. The city needed Aliso Canyon, and Aliso Canyon faithfully met the city's demands. Only there were hidden costs too, drifting relentlessly over Porter Ranch. ■



THE RELUCTANT REVOLUTIONARY

Palestinian President Mahmoud Abbas is doing all he can to prevent a Third Intifada. Will his people listen?

AT THE PALESTINIAN refugee camp Qalandiya, just north of Jerusalem, residents have turned the community center into a mourning area for the nine young men from the camp who have died in attacks on Israelis or clashes with Israeli forces since October. On a recent afternoon, men sat on plastic chairs in the center, sipping black coffee and talking about the year ahead. Hope was in short supply. “If there is no political solution, this *haba* [rising] will continue and escalate,” says Jamal Lafi, head of a local residents committee.

The latest wave of violence erupted last fall, after Israeli police clashed with Palestinian demonstrators at Jerusalem’s most hotly contested religious site, known to Jews as the Temple Mount and to Muslims as the Noble Sanctuary. Since early October, Palestinian attacks, mostly stabbings and car rammings, have left 24 Israelis dead. Over the same period, according to Reuters, Israeli forces or armed civilians have killed at least 144 Palestinians—92 of whom Israeli officials described as assailants. The attacks have seemed almost spontaneous and are often celebrated on social media.

But for all of Lafi’s fears, there are significant factors that may prevent the violence from reaching the levels of a full-scale uprising. This *haba* has so far been limited to “lone wolf” attacks. There have been no suicide bombings, which were common in the Second Intifada.

More than 1,000 Israelis and more than 5,000 Palestinians died during that conflict, which began in 2000 and ended in 2005.

Although Palestinians in the West Bank tend to sympathize with the new uprising, most have avoided participating in it. This may be in part because the death toll in the Second Intifada was so high and the violence did little to resolve the conflict. This time around, the Israeli military has generally refrained from steps that would encourage mass participation in the violence, such as closing the gates on the Palestinians who work in Israel or on Jewish settlements.

But another crucial reason why the unrest has not morphed into an all-out uprising is that Palestinian President Mahmoud Abbas has taken an increasingly tough stance against this happening. Although Israeli Prime Minister Benjamin Netanyahu has publicly charged Abbas with inciting the violence, Israeli security experts have said they believe Abbas and the Palestinian Authority (PA) are working to discourage attacks and prevent another intifada. Since the end of the Second Intifada, Abbas, 80, has called upon the Palestinians to reject armed struggle and mount a campaign of nonviolent resistance to Israel’s occupation of the West Bank, a message many Palestinians seem to reject.

A December poll from the Palestinian Center for Policy and Survey Research (PCPSR) showed that 67 percent of the Palestinian public supports

BY
BEN LYNFIELD



THE RISING: A Palestinian holds a slingshot for launching stones at Israeli troops during clashes along the boundary between the Gaza Strip and Israel in November.

knife attacks. In addition, 66 percent of those polled believe that if the unrest develops into an “armed intifada,” the violence would serve Palestinian national interests in a way that negotiations have not. That leaves the Palestinian president increasingly at odds with the people he leads.

At Qalandiya, residents speak with pride of family members they have lost in the fighting. Nasser Abu Ghuweileh, whose son Wisam died while carrying out a car-ramming attack at the Israeli settlement of Adam in the West Bank, refuses to accept the traditional words of condolence, *Tislam rasak* (May your head be safe). Instead, he replies with a pained smile, “You should congratulate me on his martyrdom.”

Young people echo Abu Ghuweileh’s defiance, saying they want their camp to become a symbol of what they hope will become the Third Intifada. “We can’t stop now. We will continue,

“WE CAN’T STOP NOW....
AND IF WE DIE, OTHERS
WILL FOLLOW OUR PATH.”

and if we die, others will follow our path,” says Hussein Shehadeh, a 21-year-old electrician.

Abbas doesn’t share that vision, and he has deployed Palestinian security forces to prevent young Palestinians like Shehadeh from coming into face-to-face contact with Israelis. On December 25, for example, PA security forces blocked a protest of several hundred activists hoping to reach the Israeli army position at the Beit El settlement near the West Bank city of Ramallah, according to participants. Members of Abbas’s presidential guard stopped the marchers, some of whom had been wounded in



earlier clashes with the Israeli army, and PA plainclothes officers clubbed them with truncheons, according to Khaled Zawahreh, a participant.

Zawahreh says the protesters will surely try again. A building contractor and activist for the left-leaning Democratic Front for the Liberation of Palestine (a faction of the Palestine Liberation Organization), Zawahreh describes Abbas as “the enemy of the intifada.” On December 30, hundreds of activists from another PLO faction tried to reach Beit El, according to one of the organizers of the protest. This time it was supporters of Abbas’s own Fatah movement who were turned back by PA security, albeit without violence.

Such interventions, if they continue, are likely to hasten a further decline in Abbas’s popularity with Palestinians. His ratings slumped to 38 percent in December, down from 44 percent three months earlier. The December PCSPR survey showed that two-thirds of Palestinians want Abbas to step aside. The president also faces questions over his legitimacy on the ground: He was elected more than a decade ago, and his term expired in 2009. Because of the ongoing split between the Fatah-controlled West Bank and the Hamas-ruled Gaza Strip, no new elections are in sight.

Compared with his predecessor, the battle-hardened and often bellicose Yasser Arafat, Abbas can come across as somewhat academic and unemotional. The president has made only brief public references to the unrest. Hani Masri, director of the Ramallah-based think tank Masarat, says Abbas often sounds more like a political commentator than a president leading his people.

Netanyahu has accused Abbas of encouraging the attacks, but Nimr Hamad, a political adviser to Abbas, tells *Newsweek* that the president is not in favor of a new uprising. “An intifada will not serve the interest of the Palestinians, nor will it lead to any reconciliation,” he says. “We are in favor of solving this conflict through negotiations.”

Abbas has also come under pressure recently from within Fatah to be more confrontational

toward Israel. Naim Murar, a Fatah official in Ramallah who helped organize the December 30 march that was blocked, says he wants to see Abbas follow up on a 2015 PLO vote to suspend security cooperation with Israeli forces. According to Murar, the president should also endorse a boycott of all Israeli goods, not just products made or grown in Israeli settlements in the West Bank, and he should aggressively push for the prosecutions of Israeli leaders at the International Criminal Court on war crimes charges. “We need the political positions to be in line with the haba,” says Murar.

“[Abbas] doesn’t speak, act or lead. He is busy with side issues,” says Masri. “The leadership is in a maze. They don’t know what to do. They are not providing people with an effective plan that they can follow. People are acting on their own.”

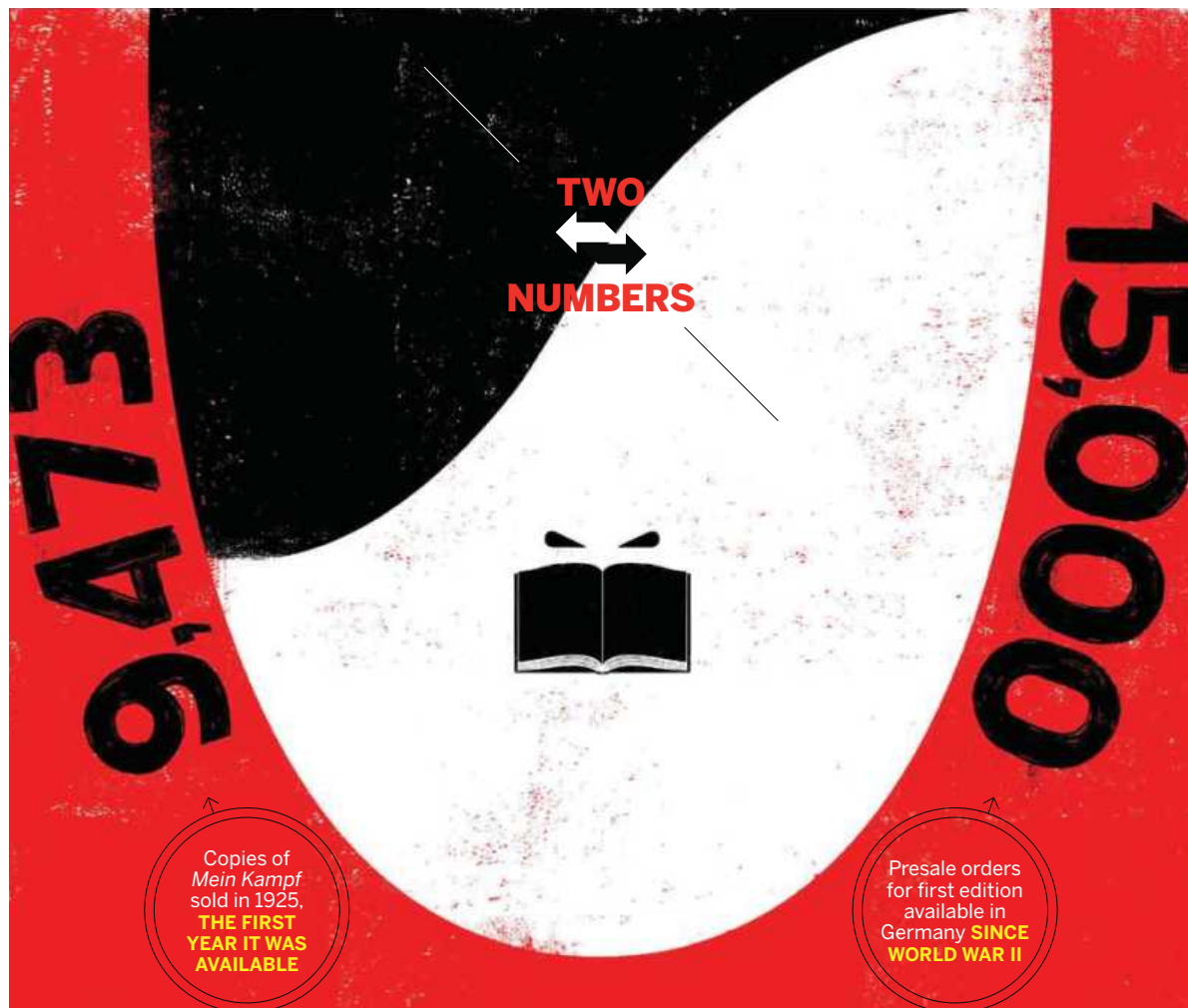
Hamad disputes this, saying Abbas’s strategy is to persuade key international bodies and powers—specifically the U.N., the U.S., the EU and Russia—to pressure Israel to stop building new settlements in the West Bank and to halt construction in the existing Jewish communities there. “If the Israelis continue to refuse to freeze settlements and to respect the implementation of the agreements signed with them, [we will see] the internationalization of this conflict,” he says.

A senior PA security official, speaking to *Newsweek* on condition of anonymity because

“THE LEADERSHIP IS IN A MAZE. THEY DON’T KNOW WHAT TO DO. THEY ARE NOT PROVIDING PEOPLE WITH AN EFFECTIVE PLAN.”

he is not authorized to discuss political matters, says Abbas “is the best choice for rational Palestinian thinking people. He knows he doesn’t have a 100 percent popularity, but the role of responsible leadership is to take people from point A to point B, even if they can’t see that point B is better than point A.”

Khalil Shikaki, director of the PCPSR, believes the coming months will likely see an uptick in violence. He says 2016 “will probably be worse than 2015.” How much of an escalation there is could depend as much on the internal struggle among Palestinians as on their conflict with Israel. **N**



Mein Kampf Fire

LONG OUT OF PRINT IN GERMANY, HITLER'S MANIFESTO SELLS OUT IN NEW EDITION

For the first time since World War II, a new edition of Adolf Hitler's *Mein Kampf* has been published in Germany, and it's proving even more popular than when it first came out.

The new two-volume book, in which Hitler says Jews are "the personification of the devil," comes in at 2,000 pages, including 3,700 annotations. The Germany-based Institute for Contemporary History, which has been researching the Nazi regime since 1949, self-published the book. Magnus Brechtken, deputy director of the institute, says it had 15,000 orders

by January 8, when it went on sale with an initial print run of 4,000. Days later, the book was on its third print run, and orders continue to climb.

Hitler wrote much of the first volume of *Mein Kampf—My Struggle—* while in prison for treason, and it sold 9,473 copies in 1925, the first year it was available. By war's end, 12 million copies had been sold in Germany. *Mein Kampf* has not been widely available in Germany since then, because the Bavarian state government obtained the copyright and refused to allow anyone to print it. The copyright expired at

the end of December, 70 years after Hitler's death. Now anyone can publish it, as long as they include criticism, so as not to violate *volksverhetzung*, German laws against incitement to hatred. (The text is widely available in other countries.)

Ronald Lauder, president of the World Jewish Congress, says it's "absurd" to re-release *Mein Kampf* now as "scholarship." "It's a hateful, racist, anti-Semitic book, and why they would allow it to be republished is beyond me," he says. With a spike in anti-Semitic incidents in Europe, Lauder adds,

republishing the manifesto is "like taking a fire and throwing oil on it."

Brechtken says the institute consulted with victims' groups and Jewish scholars. "We understand their feelings," he says. "We have the same aim as those who are representing victim groups of the Third Reich—mainly to inform the public about the racism that is in *Mein Kampf* and in other texts of this kind, and to help society at the present to prevent anything like that from happening again. We cannot ignore this text."

SOURCES: ROOSEVELT AND THE HOLOCAUST BY ROBERT BEIR, *THE RISE AND FALL OF THE THIRD REICH* BY WILLIAM SHIRER, INSTITUTE FOR CONTEMPORARY HISTORY

BY
MAX KUTNER
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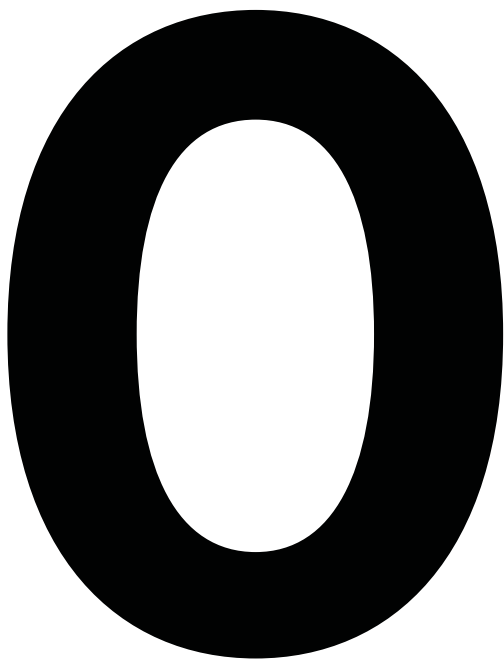




CATHOLIC GUILT?

HOW FOUR MEN IN A LURID RAPE
CASE WERE SENT TO PRISON
BY A LYING, SCHEMING
ALTAR BOY

BY RALPH CIPRIANO

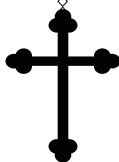


ON OCTOBER 9, 2015, a former Philadelphia altar boy reported to the office of Dr. Stephen Mechanick to undergo a court-ordered forensic psychiatric evaluation. It took nearly three hours because the two men had a lot of ground to cover. Daniel Gallagher is a slender 27-year-old with a wispy beard who is better known as “Billy Doe.” Under that pseudonym, he made national headlines in 2011 when he claimed to have been serially raped as a fifth- and sixth-grader at St. Jerome’s parish by two priests and a Catholic schoolteacher.

Gallagher subsequently became the Philadelphia district attorney’s star witness at two historic criminal trials. His graphic testimony helped convict three alleged assailants, as well as Monsignor William Lynn, the Archdiocese of Philadelphia’s former secretary for clergy, who was found guilty of endangering the welfare of a child. The monsignor became the first Catholic administrator in the country to go to jail for failing to adequately supervise a sexually abusive priest.

The Billy Doe rape story was so sensational it attracted the attention of crusading *Rolling Stone* writer Sabrina Rubin Erdely. She described Billy Doe in a 2011 story, “The Catholic Church’s Secret Sex-Crime Files,” as a “sweet, gentle kid with boyish good looks” who had been callously “passed around” from predator to predator. According to the charges recounted by Erdely, two priests and a Catholic schoolteacher “raped and sodomized the 10-year-old, sometimes making him perform stripteases or getting him drunk on sacramental wine after Mass.”

Erdely is the same reporter who later wrote about “Jackie,” a University of Virginia student who claimed she was gang-raped by seven men at a fraternity party. The 2014 story, which dominated headlines and cable TV news for weeks, was subsequently



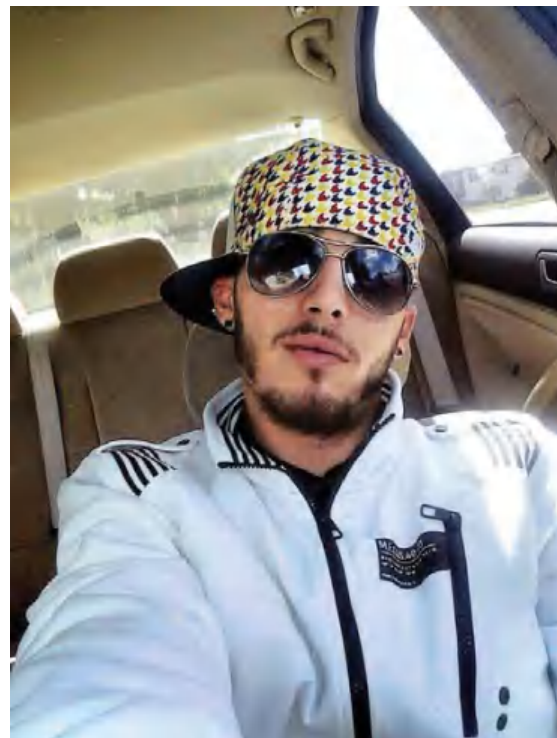
LAST RIGHTS: Engelhardt, right, died in prison in 2014, but the members of his religious order are still fighting to exonerate him of the rape charges made by Gallagher, bottom.

exposed as a hoax by “Jackie,” retracted by *Rolling Stone* and is now the subject of a couple of libel suits.

Judging from Mechanick’s report, Billy Doe has as much credibility as Jackie. In a 40-page report obtained by *Newsweek*, the forensic psychiatrist recounted Gallagher’s test results from the Minnesota Multiphasic Personality Inventory test known as the MMPI-2:

The client is apparently immature and self-indulgent, manipulating others to his own ends.... He refuses to accept responsibility for his problems. He may have an exaggerated or grandiose idea of his own capabilities and personal worth. He is likely to be hedonistic and may overuse alcohol or drugs. He appears to be quite impulsive, and he may act out against others without considering the consequences.... Paranoid features and externalization of blame are likely to be present.... His manipulative and self-serving behavior may cause great difficulties for people close to him.... An individual with this profile is usually viewed as having a Personality Disorder, probably a Paranoid or Passive-Aggressive Personality. Symptoms of a delusional disorder are prominent in his clinical pattern.

On top of bombing out on the MMPI-2, Gallagher admitted he lied and provided “unreliable information” to Mechanick about his substance abuse and



FROM LEFT: DANIEL GALLAGHER; MATT ROURKE/AP; PREVIOUS SPREAD: DON KLUMPP/ALAMY



**“IT IS NOT POSSIBLE TO CONCLUDE TO A REASONABLE
DEGREE OF PSYCHIATRIC OR PSYCHOLOGICAL CERTAINTY
THAT MR. GALLAGHER WAS SEXUALLY ABUSED AS A CHILD.”**



+ TRIAL BY IRE: In December, Philadelphia DA Williams, who led the prosecution in the Billy Doe case, filed an appeal against a court ruling that overturned Lynn's conviction for a second time.

psychiatric history, as well as his personal and medical background. After a painstaking review of the subject's medical records gathered from 28 different drug rehab facilities, hospitals, doctors and drug counselors Gallagher visited, the psychiatrist wrote that Gallagher admitted he was "not always honest with his medical providers." Such as in 2007 and again in 2011, when he claimed to be a paramedic and a professional surfer who had to give up the sport because of his drug addiction; he also claimed to have suffered a herniated disc.

Gallagher admitted to Mechanick that his claim to be a paramedic was a lie. He testified in a civil deposition that he did "not really" earn any income as a surfer. In addition, Mechanick wrote that medical records "do not indicate that Mr. Gallagher was ever diagnosed with a herniated disc."

All that might be dismissed as trivial, but Gallagher had also provided "conflicting and unreliable information" about his history of sexual abuse, as well as "conflicting and unreliable information" about the

specifics of the alleged attacks by the two priests and schoolteacher, Mechanick wrote. "It is not possible to conclude to a reasonable degree of psychiatric or psychological certainty that Mr. Gallagher was sexually abused as a child," Mechanick added.

The psychiatrist isn't the only person deeply skeptical of Billy Doe and his stories. The detective who led the Philadelphia district attorney's investigation into Gallagher's allegations against the priests and teacher also has some disturbing doubts. In a confidential deposition obtained by *Newsweek*, retired Detective Joseph Walsh was asked on January 29, 2015, about nine significant factual discrepancies in Gallagher's story. The detective testified that when he questioned Gallagher about those discrepancies, Gallagher usually just sat there and said nothing. Or claimed he was high on drugs at the time. Or told a different story.

'SUCK ALL THE BLOOD OFF'

IN ADDITION TO being the Philly DA's star witness in two criminal trials, Gallagher filed a civil suit against the Archdiocese of Philadelphia in 2011, as well as against his alleged assailants—the Reverend Charles

MATT ROURKE/AP

Engelhardt, former priest Edward Avery and former schoolteacher Bernard Shero. The archdiocese settled with Gallagher in August 2015, according to two sources, for an estimated \$5 million. (A spokesman for the archdiocese and its lawyer did not respond to a request for comment.)

Avery and Shero are still in jail. Engelhardt died in prison in November 2014, hours after the 67-year-old priest was handcuffed to a hospital bed, kept under armed guard and denied a potentially lifesaving heart operation. The members of Engelhardt's religious order, the Oblates of St. Francis de Sales, have continued the battle to exonerate their fallen brother; they paid for Mechanick to evaluate Gallagher for the civil suit.

Shortly after receiving Mechanick's report on October 28, Gallagher's lawyer, Slade McLaughlin, dropped the civil suit against the individual defendants, on the night before jury selection. Some speculate that McLaughlin, who did not respond to *Newsweek's* requests for comment from him or his client, withdrew the suit because he'd already hit big with the deep-pocketed defendant in the case, the archdiocese. Others suggest McLaughlin did not want to put Gallagher on the stand, where he would have had to answer questions about the forensic psychiatrist's report. But there were plenty of reasons to doubt Gallagher's credibility long before Mechanick examined him. Gallagher is a former heroin user and dealer who had been kicked out of two high schools and been in and out of 23 drug rehabs over a 10-year period. He'd been arrested six times on charges of drugs and retail theft, including one bust for possession with intent to distribute 56 bags of heroin.

The sexual assaults of Gallagher allegedly occurred during the 1998-99 and 1999-2000 school years, when he was 10 and 11 years old. From the beginning, he told an incredible, lurid story, the details of which were often changing. When he first reported his abuse to two social workers for the Archdiocese of Philadelphia on January 30, 2009, Gallagher claimed Engelhardt had accosted him after a 6:30 a.m. Mass. He said the priest plied him with sacramental wine and then anally raped him behind locked doors in the church sacristy in a brutal "ramming" attack that lasted from 7 a.m. until noon. After the rape, Gallagher claimed the priest threatened him, saying, "If you ever tell anyone, I will kill you."

But Gallagher told Mechanick a different story, the same one he told a grand jury and at the criminal trial—that he and the priest had engaged in mutual masturbation and oral sex. Gone were the five hours of anal rape and Engelhardt's threat to kill him.

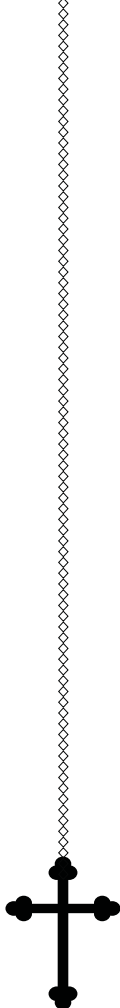
Gallagher told the two archdiocese social workers that in the second attack Avery "punched him in the back of the head, and he fell down." And when he woke up, "he was completely naked, and his hands

were tied with altar boy sashes." Gallagher claimed the priest then anally raped him, smacked him in the face and "made him suck all the blood off his penis." When this vicious assault was over, Gallagher said, the priest threatened that if he ever told anybody, he would "hang him from his balls and kill him slowly."

But when Gallagher talked to the police and testified before a grand jury, he dropped the punch in the head, as well as the claims about being tied up with altar sashes, smacked in the face and forced to suck blood. He also omitted the priest's threat to "hang him from his balls."

Instead, Gallagher said he'd engaged in mutual masturbation and oral sex with Avery and described a subsequent attack in which the priest forced Gallagher to perform a striptease.

Gallagher at first told the social workers that his third attacker, homeroom teacher Shero, asked him to stay after class and offered to drive him home. In



**THE DA "IS [NOW]
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the teacher's car, Gallagher claimed, Shero punched him in the face, attempted to strangle him by wrapping a seat belt around his neck, performed oral sex on him and made Gallagher masturbate him.

Gallagher claimed that this attack took place in the parking lot of an apartment building near his home and that Shero told Gallagher if he told anyone, "I will make your life a living hell."

But when Gallagher testified in court in 2013, he didn't say Shero made him stay after class. This time, he said Shero pulled up across the street from a strip mall and offered him a ride home, and the attack took place in a parking lot. Gallagher dropped from this new version of his story the punch in the face, the seat belt wrapped around his neck and the threat to make his life a living hell.

When confronted in court with these factual discrepancies, Gallagher testified that he was high on drugs and "basically in a semi-comatose state" when he spoke to the two social workers and didn't remember what he told them. (The two social workers testified that Gallagher walked and talked normally, did not smell of alcohol and did not appear to be impaired in any way when they interviewed him.) During an examination by Mary Gail Frawley-O'Dea,



a clinical psychologist hired by his lawyers, Gallagher “acknowledged that he originally embellished the overt violence and the extent of what happened to him,” Frawley-Dea wrote. “He was, and is, so ashamed; so guilty that he ‘did not do something,’ that he ‘did not stop [the attack],’ so self-blaming that he tried to make himself appear more overpowered, physically helpless, and unable to fight back than he actually was.”

When talking to Frawley-O’Dea, Gallagher also put a new ending on his Shero rape story. At trial in 2013, he testified that after the rape, “I just ended up getting out of the car and walking” home. But

Gallagher told Frawley-O’Dea that after Shero raped him, the teacher “threw the boy out of the car and drove away.”

When he first told his improbable story to the district attorney, Gallagher was locked up in Graterford Prison on a probation violation. On January 28, 2010, Detective Andrew Snyder sprang Gallagher out of jail and drove him to the district attorney’s office, where Gallagher’s parents were waiting, along with Assistant District Attorney Mariana Sorensen from the Special Investigations Unit.

When Snyder and Sorensen interviewed Gallagher, then 21, his parents, including his Philadelphia

JOSEPH KACZMAREK/AP



FREE/NOT: In 2013, the Superior Court reversed Lynn's conviction and ordered that he be "discharged forthwith," but the judge in his original trial refused and ordered him kept under house arrest.

police sergeant father, were allowed to sit in on the interview, although the regular policy in the Philadelphia Police Department, as well as the DA's office, called for interviewing an adult complainant by himself. The DA gave Gallagher what defense lawyers characterized as the "red-carpet treatment" because Gallagher was one of the few alleged victims of sex abuse whose allegations fell within the statute of limitations, which meant charges could be filed.

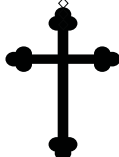
In his report, Mechanick tracked the conflicting

stories Gallagher told his many doctors and drug counselors about his alleged history of sex abuse as a child. Before he told the archdiocese he had been raped by two priests and a schoolteacher when he was 10 and 11, Gallagher claimed to doctors that he had been (1) molested at 6 by a friend, (2) sexually abused at 6 by a neighbor, (3) sexually assaulted at 7 by a teacher, (4) molested at 8 or 9 by a friend and (5) sexually assaulted at 9 by a 14-year-old.

'PROSECUTORIAL LUST'

In Philadelphia, the Billy Doe case remains front-page news three years after the original trial that convicted Lynn. On December 22, the Pennsylvania state Superior Court for the second time overturned Lynn's conviction and ordered a new trial. A three-judge panel ruled that the trial judge in the case, M. Teresa Sarmina, abused her discretion when she admitted into evidence against the monsignor 21 supplemental cases of sex abuse dating back to 1948, three years before the 64-year-old Lynn was born.

Lynn, however, isn't getting out of jail anytime soon. He continues to work for 19 cents an hour as a prison librarian, pending an appeal by Philadelphia District Attorney Seth Williams. The DA last month



**GALLAGHER SAID THE
PRIEST ANALLY RAPED
HIM IN THE CHURCH
SACRISTY IN A BRUTAL
"RAMMING" ATTACK THAT
LASTED FROM 7 A.M.
UNTIL NOON.**

filed a petition to reargue the case before all nine judges on the appeals court. Also blocking Lynn's release is Sarmina, who has repeatedly denied his applications for bail.

Lynn had served 18 months of his three- to six-year prison sentence on December 26, 2013, when the Superior Court reversed his conviction and ordered that he be "discharged forthwith." But Sarmina ordered that Lynn be kept under house arrest in a church rectory and forced to wear an electronic ankle bracelet.

On April 27, 2015, the reversal was reversed by Pennsylvania's highest court, and the DA filed a motion to revoke his bail. Sarmina agreed and, after 16 months of house arrest, sent Lynn back to prison.

At a December 28 press conference, DA Williams vowed to do whatever it takes to keep Lynn in jail, "where he belongs," including, if necessary, a retrial.

Williams, elected in 2013 to a second four-year term as DA, declined to comment to *Newsweek*.

On January 3, *Philadelphia Daily News* columnist Christine Flowers, herself a lawyer, blasted the DA. She wrote that Williams was originally “aiming either for a halo or a higher office” when he was overcome by “prosecutorial lust” in his crusade to put Lynn behind bars, and that the DA “is [now] aiming to be one of those prosecutors who don’t end up as the laughingstock on a future Nancy Grace marathon.”

“Monsignor Lynn has clearly been mischarged, deprived of a fair trial because of a judge’s flawed evidentiary decisions, and subject to punitive detention,” the columnist wrote. She described Lynn as “the sacrificial lamb for an angry mob of ‘victim’s advocates,’” but added that “there is a very good chance that he will be vindicated and the prosecution shown to be a hollow act of vengeance.”

POT AND BRASS KNUCKLES

IN A SHARP contrast to how Daniel Gallagher was portrayed by the DA and the media at the time of his trial (“a sweet, gentle kid with boyish good looks”), his personal Facebook page has many images of him flipping his middle finger and looking like someone who would probably terrify the stereotypical altar boy.

Besides his improbable and constantly changing tales of rape, there’s an entirely different set of reasons to believe that Gallagher is a habitual liar. Mechanick

THE PRIEST DIED IN PRISON AFTER BEING HANDCUFFED TO A HOSPITAL BED, KEPT UNDER ARMED GUARD AND DENIED A POTENTIALLY LIFESAVING HEART OPERATION.

used Gallagher’s school and medical records to disprove the numerous allegations of injuries, both physical and psychic, he has claimed over the years.

In his civil suit against the archdiocese, Gallagher claimed that in addition to the “physical trauma of the acts of forcible oral and/or anal rape and sodomy perpetrated” by his attackers, he had “sustained severe psychological and emotional distress, including post-traumatic stress disorder, manifested by physical ailments and complaints, including, but not limited to, sleeplessness, loss of appetite, pain in his

LIVING HELL: Gallagher accused one of his teachers, Shero, right, of raping him while driving him home, but changed significant details of how and where the assault occurred several times.

testicles, and uncontrollable spontaneous gagging and vomiting.... The plaintiff has suffered and continues to suffer great pain of mind and body, shock, emotional distress, physical manifestations of emotional distress, embarrassment, loss of self-esteem, disgrace, humiliation, and loss of enjoyment of life, and has suffered and continues to suffer spiritually.”

Mechanick, however, concluded that Gallagher’s “academic records did not support his claim that he developed emotional and behavioral symptoms due to sexual abuse.” Gallagher claimed that after the alleged attacks by the priests, he lost interest in school, was absent a lot and became seriously ill. But his grades did not decline during fifth and sixth grade, Mechanick wrote. Nor did he have a “significant increase in days absent.”

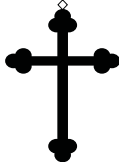
Gallagher’s medical records also did not support his claim of developing emotional and behavioral symptoms. Gallagher told a grand jury in 2010 that he was “coughing profusely and vomiting violently” after he was allegedly raped in sixth grade by his homeroom teacher, the doctor wrote. Gallagher told the grand jury that because of his ailments, he was sent to a specialist. “However, Mr. Gallagher’s medical records document that he had respiratory and gastrointestinal problems that predated the alleged sexual abuse, and that dated back to the late 1980s,” Mechanick wrote.

While Gallagher’s civil lawsuit contends he suffered testicular pain as a result of sexual abuse, a claim he also made in criminal court, Mechanick didn’t buy it. The forensic psychiatrist found that Gallagher’s medical records dated his complaint of testicular pain back to April 1999, a year before the May 2000 date when Gallagher claimed he was raped by Shero.

Gallagher testified at trial that he lost “a good amount of weight” after the attack by Shero. However, the psychiatrist wrote, “Mr. Gallagher’s recorded weights and height during his office visits and on his growth charts showed consistent increase, before, during and after” the alleged attacks.

Mechanick concluded that Gallagher’s “social activity after his alleged abuse is not consistent with his claim that he became socially isolated and a ‘loner’ due to the sex abuse.” Gallagher played roller hockey and football in grade school, and Mechanick points out that he testified during his civil deposition that he worked on the high school yearbook and was a member of the chess club, the art club and the math club. Gallagher also testified that in high school he had five girlfriends and four male friends.

Mechanick also concluded that both of Gallagher’s





parents contradicted their son's claim that he had undergone a dramatic personality change after the alleged attacks. In an undated note, Sheila Gallagher, a registered nurse, told her son's counselor from 2004 to 2007 that the "major, life-changing event" for her son was when his grandmother died of cancer in 2002. The grandmother has been described as a second mother to Daniel; he has a large tattoo of a crucifix on his back that says, "In memory of Maggie." Two months after her death, Gallagher was expelled from Archbishop Ryan High School for possession of pot and brass knuckles.

Sheila Gallagher told that same story to a Philadelphia grand jury on November 12, 2010:

Q: Did there come a time when you noticed a change in Daniel's behavior?

A: Yes. At age 14, as he entered high school, freshman year at high school, he wasn't the same child. He was very troubling to us.

Q: OK. Prior to that, what was his personality?

A: He was basically a very pleasant, active, happy person prior to that, and he was defined by some people as either Dennis the Menace or the all-American boy up to that point.

Q: OK. So he's leaving St. Jerome's and entering into high school?

A: Uh-huh.

Q: And at this time what's going on that's different?

A: Freshman year started in September, and in February we were called and he was thrown out of Archbishop Ryan for having some marijuana and having brass knuckles.

The Philadelphia district attorney's office made that factual contradiction go away by rewriting the mother's grand jury testimony. The DA's 2011 grand jury report stated, "Billy's mother also told us of a dramatic change in her son's personality that coincided with the abuse.... Billy's mother watched as her friendly, happy sociable son turned into a lonely, sullen boy. He no longer played sports or socialized with his friends. He separated himself and began to smoke marijuana at age 11."

For three years, Williams has refused to answer questions about this factual error in his grand jury report, as well as some 20 other factual errors in that report, which is still posted on the DA office's official website. Sorensen, who no longer works in the DA's office, disputed that there are multiple



errors in the report in an online comment to a previous *Newsweek* story. The DA's office was presented with an itemized list of the 20 errors in mid-January but refused to comment.

Gallagher's police sergeant father, James Gallagher Sr., also told the grand jury that his son's personality change took place in high school. At the 2013 trial of Engelhardt and Shero, James Gallagher Sr. was asked when his son developed behavioral problems. "His first year as a freshman at Archbishop Ryan, he was expelled," Gallagher Sr. testified. "And shortly after that is when we started noticing all the behavioral problems.... He became more withdrawn. He became a loner. He wasn't the same boy after he got expelled from that school.... He changed from my Danny, and he changed into another boy that I didn't know."

Mechanick proposes a cause for this change. "Information from Mr. Gallagher's parents indicates that their son's behavioral changes were related to his drug abuse," he wrote. James Gallagher Sr. testified that his son became involved with drugs and "stared right through him," probably around the age of 14.

NO BROTHERLY LOVE: The case is still front-page news in Philadelphia, three years after Lynn was sent to prison. His conviction was overturned, but the judge has denied his bail applications.

While Daniel Gallagher's civil suit claimed he suffered "loss of self-esteem, disgrace, humiliation, and loss of enjoyment of life," Mechanick reached the opposite conclusion. He wrote that Gallagher's statements to him, as well as his medical records and testimony in the civil case, "indicate that regardless of whether he was abused by anyone, his psychiatric condition has substantially improved."

In 2013, one of his drug counselors wrote, "His self-esteem has greatly improved and he continues to learn how to deal with his everyday life without drugs."

Gallagher now works for his grandfather's landscaping business. According to Mechanick, "He feels better about himself now than he did in the past. He states that he feels he is trying to start his life now, and that he has a nice family and a good business."

"The results of Mr. Gallagher's MMPI-2 support the conclusion that Mr. Gallagher does not currently have a psychiatric disorder due to his alleged

MATT ROURKE/AP

sexual abuse,” Mechanick wrote. He added that those test results do “not indicate that he has a depression, anxiety disorder, post-traumatic stress disorder, or any other psychiatric disorder that is attributable to his alleged sexual abuse.”

HOW LUCKY HE’S BEEN

When Detective Walsh was deposed on January 29, 2015, in Gallagher’s civil case against the archdiocese and his alleged abusers, the retired 35-year veteran of the police force was asked about Gallagher’s assertion that Engelhardt raped him after an early-morning Mass in the fifth grade.

The problem here was that Gallagher’s mother kept meticulous calendars in her kitchen that recorded all the daily activities of her two sons, including the dates and times when they were assigned to serve as altar boys. And not once during the entire school year when Gallagher was in fifth grade did his mom record on her calendars that he served as an altar boy at an early-morning Mass.

When Walsh asked Gallagher about that contradiction, “he didn’t answer me,” the detective said.

Walsh said he confronted Gallagher about “a lot of the discrepancies and how the stories had changed.” The detective was talking about times, places and circumstances of the alleged attacks. “[A] large percentage of time where there was a discrepancy and I brought it to his attention, he would not answer,” Walsh said. “He would just remain silent...or said, ‘I was so high on drugs, I just said anything.’”

Or he would tell a different story.

For example, the 2011 grand jury report said that when Billy Doe was a high school student, his mother found two textbooks on sex abuse under his bed. When she questioned him about the books, the grand jury report said, “he covered up for his abusers by telling her that he had them for a school assignment.” The implication was that poor little “Billy” was trying to come to terms with the abuse he had endured.

But Gallagher told Walsh a different story. “One day in the DA’s office, he saw the book on my desk, and he pointed out the indentations in the cover of the book,” Walsh testified. “He used that book he said to crush pills to get high.”

Walsh questioned Gallagher about the alleged attack by Engelhardt after Mass in December 1998. “He told me he walked to the church from his home to serve 6:15 Mass,” Walsh testified, citing a slightly earlier time than Gallagher gave the social workers. “And then when [the rape] was over, he left the sacristy and went to the school and sat on the steps of the school until the school opened.”

Walsh said Gallagher told him that “his parents let him walk approximately three-quarters of a

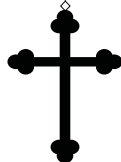
mile at quarter to 6 in the morning in the winter” from home to church, and “that no one was there to meet him after Mass and take him home and get him ready for school.”

Walsh testified that he reminded Gallagher that his school didn’t open until 7:30 a.m. “That’s when he said, ‘Well, I would just sit on the steps’” until school opened. Walsh said he informed Gallagher that the detective had taken a statement from Gallagher’s older brother, James Jr., on January 9, 2012, that said whenever he had a Mass to serve, his parents would drive him to and from the church. At trial, Sheila Gallagher testified that she was such a helicopter mom, she would drive both of her sons to and from Mass, even though the church was less than a mile away from home.

Asked if Daniel Gallagher had any response to that contradiction of his story, Walsh replied, “No, he did not.”

Meanwhile, four men were sent to jail because of Gallagher’s accusations, and one of those men died in prison. At Engelhardt’s funeral, the Reverend James Greenfield, the provincial who leads the Oblates of St. Francis de Sales, revealed that on the eve of his criminal trial, Engelhardt could have negotiated a deal that would gotten him off with just community service. Instead, he got sentenced to six to 12 years in prison “because he would not perjure himself by pleading guilty to ‘make a deal,’ to admit to a crime that he did not commit.”

Talk to the eight defense lawyers in the criminal cases and they’ll all tell you Daniel Gallagher is a chronic liar, a junkie hustler and a confabulator. They can’t believe how lucky he’s been. After the DA got Gallagher out of jail so he could tell his



**“I WAS SO HIGH
ON DRUGS, I JUST SAID
ANYTHING.”**

stories of sexual abuse, he was arrested twice on charges of drug possession, including one for possession with intent to distribute 56 bags of heroin. But, thanks to his criminal lawyer, that heroin was thrown out of court as evidence. A subsequent drug bust, on charges of possession of a controlled substance, also disappeared after nine continuances in 18 months, when the DA let Gallagher into an accelerated rehab program for which he ordinarily would not have been eligible.

Today, Daniel Gallagher is a free man with a clean criminal record living in Florida with his new wife, who’s expecting the couple’s first child. And, thanks to the Archdiocese of Philadelphia, he’s also a multimillionaire. **N**

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THE MOST DANGEROUS JOB
ON EARTH





Syria's White Helmets live
(and often die) by the motto 'to save
one life is to save humanity'

BY JANINE DI GIOVANNI
PHOTOGRAPHS BY NICOLE TUNG

On a warm morning in December, a few dozen Syrians from Aleppo and Idlib—former students, teachers, vegetable sellers and farmers—gather in an abandoned firefighting training center near the Syrian-Turkish border.

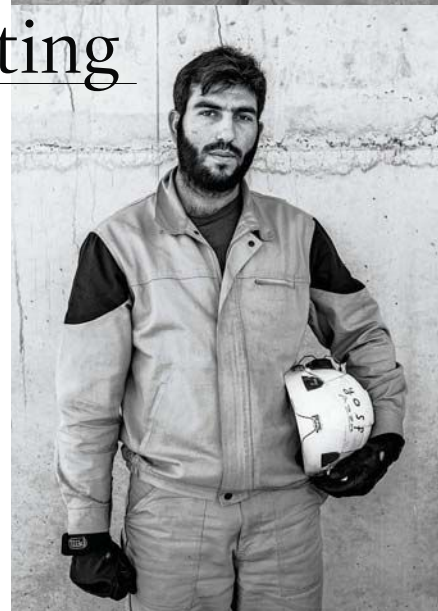
They have come here to learn advanced rescue skills that they will use to teach newly recruited emergency workers back home. They are members of the Syrian Civil Defense, known as the White Helmets—the largest civil society group in Syria and one that is nonsectarian, neutral and unarmed.

The site looks like a deserted campground, aside from the burned-out bus in the middle of a neighboring field and collapsed concrete buildings that they use for simulation exercises. The exact location of their training center is undisclosed, and most of them ask to be identified by only their first names, because the White Helmets have received death threats. They also know there are sleeper cells of the Islamic State militant group (ISIS) in the area, and there have been shootings and bombings nearby.

It's Week Three of training, and soon the men will go home. The mood is somber—a recent bombing in Idlib killed more than 50 people—but there is a sense of deep bonding here. Some of these men have known one another since childhood, and they are bound by this vital and perilous work they have undertaken.

Their first exercise involves building a huge oil fire near the ruins of the bus, then extinguishing it. As they pull on protective gear, including gas masks, and unravel hoses, they make a few jokes and talk about their lives before the civil war and people they know in common. One of their trainers has “better than nothing” scrawled on the back of his jacket. Khaled, a father of four from Idlib, explains, “We have a strange gallows humor. We’ve seen so much. It’s a way of releasing tension.”

“Tell her about the sheep market in Aleppo,” one man says. Samer Hussain, 30, responds, “A bomb hit the market when it was most crowded—people had come out to buy food. The



SYRIA'S BRAVEST:
The men of the
White Helmets
chose to play
their part in
the civil war by
saving others.



animal flesh was mixed with humans,” he says. “We found arms, legs, heads. We lost around 25 people that day. Some of them were beyond recognition because of the bombs. You could no longer describe them as human.”

Several other men work on building up the fire. Then they take a break, pull off their helmets and masks and take out packets of cigarettes. They exist, they say, on cigarettes and coffee. “It’s not like we worry about dying from cigarettes,” says one. “We probably have the most dangerous jobs on earth.”

With the war in Syria now in its fifth year, average life expectancy there has dropped by two decades. More than 250,000 people have been killed and more than 1 million injured, according to the United Nations. Millions more have been driven from their homes, including more than 4 million who have fled the country as refugees.

There are more than 2,800 White Helmets, including 80 women, all volunteers who work full time and get paid a \$150 monthly stipend. So far, according to Raed al-Saleh, 33, the founder of the White Helmets, they have saved more than 40,000 lives.

Although they operate largely in rebel-held areas of Syria, the White Helmets don’t discriminate between victims on one side or the other. “To save one life is to save humanity” is their motto, and from the rubble they have dug out members of Hezbollah or Iranians fighting on behalf of President Bashar al-Assad, as well as Free Syrian Army opposition fighters. But most often, they save civilians. For those who live in frequently targeted areas, the Syrian Civil Defense, or *Difaa Midani* in Arabic, is a symbol of hope in an exceedingly bleak conflict.

This is a war that has attracted limited interna-

“IT’S NOT LIKE WE WORRY ABOUT DYING FROM CIGARETTES.”

tional humanitarian assistance, given the risks of operating in Syria, so the civilian population has suffered terribly. Nearly all structures of society have broken down, from education to health care. Schools have not functioned for years, and if you have a chronic disease, such as cancer or diabetes, you most likely die without treatment.

The White Helmets formed in 2013 as a grassroots operation funded by the British, Danish and Japanese governments to recruit first responders. It has a budget of \$30 million a year, much of which is spent on equipment, such as heavy diggers to remove bodies from under concrete that has collapsed, and the stipends.

After initially working with foreign advisers, it is now an entirely Syrian operation, with around 20 to



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INTO DANGER:
Whenever they rush toward a burning building, the firefighters of the White Helmets are acutely aware that a second wave of bombs may be coming.

30 new recruits coming forward each month. “The very fact that this exists in communities gives people more of a sense of security,” says James le Mesurier, a former British soldier with Mayday, a nongovernmental organization that along with skilled Turkish rescue workers helped set up and train the first cadre of White Helmets.

So far, 110 White Helmets have died on the job, and four times that many have been seriously wounded. The average age is 26, although one elderly man joined the day after he buried his son, who was a White Helmet. The youngest is 17. They work at all hours of the day and night, and their centers, although in secret locations, are frequently targeted, as are their vehicles, including their ambulances. They say this has happened with more alarming frequency since Russian airstrikes in support of Assad began on September 30.

“This is the least we can do for our country,” says Khaled, the father from Idlib. He likens it more to a

“calling” than a job. After training and pledging to abide by the code of conduct—no guns, strict neutrality and no sectarianism—they are given a white uniform and helmet and sent on their first mission. The training rarely prepares them fully for the real thing, says Abdul Khafi from Idlib. The most difficult part of the job is not the physical but the psychological impact of seeing so many dead and injured.

“Killing is easy. Saving lives is much harder,” he says. “Sometimes the pressure is more than our endurance.”

Once they join, they rarely quit. One White Helmet left to become a refugee in Germany. “We need this,” says Jawad, 35, from Idlib, a married father with two children, who once worked in a fire brigade. “We need to save as many people as we can, especially as the war gets worse. It shows something. It means something.”

“No words can adequately describe what it is like to save a life,” Saleh, the founder of the White



Helmets, wrote in a *Washington Post* op-ed in March 2015. “But for us the elation never lasts because we are constantly under attack.” A former electronics salesman from Idlib, Saleh addressed the U.N. Security Council this past summer in an attempt to explain the misery of living under bombardment.

When they race to a location that has been bombed, they are acutely aware that more bombs—“the second tap”—are probably coming within minutes. This past summer, they had to start painting their ambulances in camouflage colors. Back then, before the Russian airstrikes began, the biggest killer was barrel bombs—rusty containers loaded with nails, glass, shrapnel, explosives and sometimes chlorine gas. (The U.N. has accused Assad of using barrel bombs, though he denies it.)

For a White Helmet from Idlib named Osama, 29, the greatest challenge was overcoming his fear. “You learn, slowly,” he says. “But now, since the Russians started coming, I am more frightened than ever. It’s a different kind of bombing.”

The White Helmets have their detractors. Regime bloggers and Russian Internet trolls accuse them of being the Nusra Front, the Al-Qaeda franchise in Syria. In the early days of their operation, one White Helmet was photographed with a gun (he was immediately dismissed). Yet at night, gathered in the hotel where they are living for these three weeks of training, most of the men don’t want to talk about religion or politics. “If you make the decision to risk your life, to save other people, it goes against radicalization,” says le Mesurier. “They’ve emerged as the representative of the average, good Syrian.”

During the evening, there are more cigarettes, along with laughter, singing, even some planning for a wedding in Aleppo. Life at home, under regular bombardment, is hellish, but few of these men seem to exhibit signs of post-traumatic stress disorder. “The fact they are part of a strong community helps them,” le Mesurier says. “They are not isolated.”

And yet, they go out when the call comes knowing there is a strong possibility they will either be injured or not return. Khafi tells of a recent raid near his home in Idlib, when a Russian bomber first targeted a civilian area, then took out the White Helmet center. It was, he says, his worst day. “It only took 10 minutes for the bombs to land, and by the end of it seven out of nine of us were badly injured,” he says. “In a matter of minutes, our center was no longer operational. That quickly, you can wipe out lives.”

A few days earlier, Khafi and his team responded to an attack outside Aleppo involving “more than 40 cluster bombs.” People were screaming for help in every direction. “Sometimes, you don’t know where to begin,” he says, describing the chaos, the confusion, the dust. Once he spent hours building a 100-foot tunnel through the rubble to reach an 8-year-old

girl who had been trapped when her house crumbled.

“When we reached her, the first thing she said was, ‘Get my sister out first,’” Khafi recalls, and she pointed to another corner of what had once been her room. Her twin sister died before the White Helmets could reach her.

“My worst day so far was at the end of October,” says Osama. He says he got a call that a Russian fighter jet had hit a chicken farm where refugees were living. As he raced to the scene with a digger to trawl out the bodies, he got another call: “Our spotter saw more Russian planes coming in for a double tap,” he says.

He got out of his vehicle and watched helplessly as the jets bombed a second time, while his colleagues continued to work. When he arrived, many of them were gravely injured. “One of my colleagues was cut in half,” Osama says. How do you abandon people, he asks, who are buried under rubble, crying out for help? “It makes you feel completely helpless.”

He and his team continued to work for hours trying to excavate a mother and seven children. “But in the end, we couldn’t do it,” he says. “By the time we got to them, they were so badly burnt I couldn’t tell if they were little boys or little girls.”

Hossam, who is 25 and was studying English literature before the war, says he joined the White Helmets in 2013 after he got out of a regime detention center, where he was held for a month. He says he entered because it was the only nonviolent way to help his country. “When I look at the last three years of my life,” he says, “I feel proud.” But his memories are also gruesome: pulling up the head of what he thought was a doll from a pile of rubble only to discover it belonged to a small girl, and finding a



BY THE TIME WE GOT TO THEM, THEY WERE SO BADLY BURNT I COULDN'T TELL IF THEY WERE LITTLE BOYS OR LITTLE GIRLS.”

weeping mother who had lost all her children and asked, “Where are my angels?”

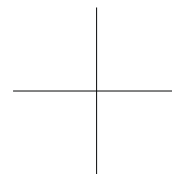
After days spent dislodging mutilated bodies covered in dust and blood, Hossam is not sure how he keeps going, but he says it is important to do so. “We know we are saving,” he says. “The bombs are destroying, but we are building. The regime is killing. We are saving.”

Hossam doesn’t know what he will do after the war ends. “I’m not sure I can go back to the life we had before,” he says. “But there is one thing: We built something here, out of nothing.” **N**





NEW WORLD



MEDICINE

— INNOVATION —

SPACE

PRESERVATION

APPS

WILDLIFE

GOOD SCIENCE

ALL JET, NO LAG!

A new aircraft is designed to keep your circadian rhythm on beat while you cross time zones

+ **SLEEPLESS IN THE SKY:** What we call jet lag is actually a form of circadian desynchrony: a disruption to the body's internal clock that can have long-term health effects on the body.

MODERN-DAY FLIGHT is a miracle with side effects. You can get halfway around the world in just hours, but fatigue and disorientation are sure to ruin the first day in your destination city. There are some jet lag remedies available, like melatonin. But what if the plane itself could be the cure?

Airbus's new A350 XWB is fitted with LEDs that can generate 16.7 million color combinations of light inside the cabin. The idea is to trick passengers' bodies by exposing them to faux sunlight that changes throughout the flight, mimicking the natural progression of day into night and night into day. Though the A350 hasn't undergone any clinical testing, it could in theory work, says Harvard University neuroscientist Frank Scheer. "The most important property of effectively resynchronizing your body clock with light is timing," he says. "If I shine light on your eye in the evening, I will delay your clock. If I do the same in the morning, I will advance it." The changing light needs to match the course of the

sun in the time zone of your destination, not origin.

But even if Airbus gets that right, Scheer says, the method still might not work if you're traveling over long distances from west to east. For instance, if you left Boston at 6 p.m. and took an eight-hour flight that arrived in Amsterdam at 8 a.m. local time, and the plane's lights were set to simulate sunrise, it would backfire. Since your body's clock will still be running on Boston time (where it's now 2 a.m.), your body will interpret the light as late evening, not early morning.

Airbus is forging ahead: Qatar Airways will begin regular A350 service to Philadelphia in January this year, and plans to start offering it to Boston and New York in March. The early reviews aren't shabby. "I arrived feeling great," says travel journalist Zach Honig, who rode the A350 on a 12-hour flight from New York to Doha, Qatar, and then on to Munich. "Even though I only got a couple hours of sleep on both flights, I hit the ground running in Munich." **N**

BY

ED CARA

[@EdCara4](#)

DISRUPTIVE

TECH'S NEW WRINKLE

Devices and apps that cater to the elderly aren't sexy, but they're vital

THE TECH INDUSTRY needs to stop being so dunderheaded about technology for old folks.

For the past decade, the industry has been laser-focused on transforming life and work for one rocketing market segment—i.e., 25-year-olds with money. It has routinely avoided, underestimated or remained ignorant about the world's other rocketing market segment—old people and the family members who take care of them.

This is personal. Like so many baby boomers, I have parents who could really use new ways of dealing with things like memory loss, immobility, shrinking social circles, boredom and, of course, escalating health care needs. I've searched for products and services that would be truly helpful and built for them, not built for the life-hacking, smartphone-glued, Snapchatting crowd. I'm frustrated with how little I can find.

A lot of indicators suggest that not much is coming anytime soon either. The monstrous Consumer Electronics Show recently wrapped. Roaming the event, you might've found the SmartyPans connected frying pan (it will tell you what you're cooking! woo-hoo!) or the Digi-Sense diaper monitor (data about your baby's farts—seriously). But you'd have been hard-pressed to find something built for seniors. "It was pathetic," says Laurie Orlov, an elder care advocate who monitored CES for her *Aging in Place Technology Watch* blog.

Or look at the list of tech unicorns—the 144 companies pumped so full of private funding they're each worth more than \$1 billion. Not one

is focused on what's being called "aging tech." It's not a business that makes venture investors salivate. "[Venture capitalists] are too busy investing in Uber and things that get virality," says Ashfaq Munshi, a former Yahoo chief technology officer and IBM Research scientist who, at 54, has become interested in aging tech. "The reality is that selling to the elderly is harder, and if VCs detect resistance, they don't invest."

The age of tech entrepreneurs doesn't help. Data collected by *Harvard Business Review* put the average age of a tech company founder at 31, and most are between 20 and 34. Entrepreneurs are told that the best way to start a company is to solve a problem they understand. It makes sense that those problems range from how to get booze delivered 24/7 to how to build a cloud-based enterprise human resources system—the problems tangible in the life and work of a 25- or 30-year-old. But for them, the trials of the elderly are too distant—the stuff of grandparents who probably live far from Palo Alto.

It's not that nothing is being done. The old "I've fallen and I can't get up" device has blossomed into a whole herd of wearable emergency calling gadgets. Seth Sternberg, a smart—and older—entrepreneur who sold one company to Google for \$100 million, has raised \$20 million to start Honor, a cloud service that coordinates care for an aging person. But you can count the developments that really matter on a couple of hands—if you discount the borderline ridiculous products such as SingFit. As if anybody's going to

BY
KEVIN MANEY
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AUTOMATED RESPONSE: Robot caregivers, such as this one in Florence, Italy, make life easier for the elderly and for those minding a facility's bottom line.

convince my stepfather to belt out “Let Me Call You Sweetheart” as a way to improve his brain.

But at least a growing cadre of people like Munshi see that it’s time to mobilize for the aging tech opportunity. Technologies like artificial intelligence and virtual reality are beginning to get good enough to transform the experience of aging.

Munshi is starting work on a home listening device that would be the descendant of an Amazon Echo or Apple Siri. It will use machine learning to be able to understand spoken words and put them in context. For an old person, the device would bypass the need to navigate a smartphone or website—an impossibility for someone with Alzheimer’s or dementia. Just say, “I want to talk to my son,” and it might open a video call on the TV screen. Someone with memory loss might not remember where his wife went or how long until she’s back. Speak the question, and the system could answer. Just by listening to the way a person talks and comparing it to past conversations, the system could identify problems like a small stroke or worsening memory loss. “It’s within reach to solve that kind of problem,” Munshi says.

The possibilities expand from there. Virtual-reality glasses in the next decade will get smaller, simpler and much better, to a point

where an isolated senior could more naturally visit with family, or socialize with contemporaries, without moving from the couch.

Combine technology like Hearbuds with GPS and facial recognition technology, and seniors could get reminders in their ears about where they are and who they are talking to.

Driverless cars should be a giant leap for the elderly. Today, to stop driving is to give up the freedom to go out to lunch or visit a friend at any time. That limitation ends with driverless cars. You could be 100, nearly blind and have the reflexes of a Galápagos tortoise, but you could whistle for your Google car and tell it to take you to the nearest speakeasy.

Wearables can be geared more to people at risk of falling instead of those wanting to track how far they run, and they could alert family members to changes in gait and monitor other vital signs for trouble.

On the health care front, the big advance might be the virtual doctor visit, erasing the difficulty of getting to a clinic or office. Devices will be able to read any vital sign the doctor needs, and HD video can let the doctor see anything. Such services are already emerging. They need to be improved and tailored to less tech-savvy seniors.

Put these developments together, and it’s possible to make getting old radically different a decade from now—as different as it is to

NOBODY’S GOING TO CONVINCE MY STEPFATHER TO BELT OUT “LET ME CALL YOU SWEETHEART” AS A WAY TO IMPROVE HIS BRAIN.

be young in 2016 compared with being young in the dark ages of 2006, pre-iPhone. Imagine existing as a teenager when all you could do on a phone is text.

In the meantime, let’s all pray that Digi-Sense never expands into the adult diaper market. There are some things about our parents we don’t want to know. **N**



CURES IN COAL MINES

Microorganisms that survive the most inhospitable conditions on Earth might be the tools to treat some of the deadliest diseases

THE MATRIX ENERGY Mine No. 1 in eastern Kentucky stretches 7 miles to its deepest point. Tiny cars creak along tracks laid on the ground in the bowels of the operation, opened in 2004, and miners here collect 4,500 tons of coal each day. But Jon Thorson, a professor of pharmaceutical sciences at the University of Kentucky and director at the Center for Pharmaceutical Research and Innovation, isn't all that interested in fossilized carbon. He believes the true value to be found in the mine lies in the soil and rocks. Thorson is digging for blockbuster drugs.

Natural medicine is often associated with ancient civilizations or bogus alternative treatments endorsed by celebrities. However, unique compounds in plants, soil and the sea have played a major role in modern treatments for conditions ranging from bacterial infections and malaria to high cholesterol and cancer. According to one study, as much as 50 percent of drug compounds on the market have their origins or are structurally based upon some type of natural product.

And there's so much more still to be uncovered. According to some research, only about 1 percent of bacterial and 5 percent of fungal species are currently known, which means it's plausible that there's something natural for everything that ails us.

Thorson says Kentucky's Appalachian region

is a good place to start looking. With more than 6,300 species, the area is the largest biodiverse "hot spot" in the U.S. Globally, it's rivaled only by China in terms of its forest diversity. "You could spend the rest of your life [here] just looking for organisms," he says. Scientists like Thorson who go out into the natural world with hopes of identifying the next great cure usually head to locations where they might find "extremophiles"—organisms that thrive in extreme environments uninhabitable for most living things, because of, say, high pressure or high temperature. These harsh environments—like the bottom of the Matrix mine—are also often devoid of natural light and have a limited amount of nutrients to support life. As a result, the extremophiles (or "exotic microorganisms," as Thorson calls them) that live there need to develop certain traits to ensure survival. And by figuring out the naturally produced chemicals that give the extremophiles their extreme traits, we can sometimes harness those characteristics and put them to use for human good.

All living creatures produce primary metabolites, such as vitamins, simple sugars and amino acids, which are created in part through the chemical transformations that are constantly going on in an organism's cells. These primary metabolites are the things required for the normal growth,



BY
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PAT CANOVA/ALAMY

CAVE SUPERMEN:
Organisms in extreme
environments like
the depths of coal
mining caves have
to develop powerful
coping mechanisms
to survive.

development and reproduction of any living thing. Thorson is interested in *secondary* metabolites—the unique compounds that give an organism the ability to do all the other things it might do, from looking a certain way to secreting toxins to fight off enemies. In the case of extremophiles, though, it's like these microorganisms are superheroes and secondary metabolites are their special powers.

Valuable extremophiles are being discovered all over the world. In 1995, researchers sampled fungus growing in a deep, abandoned, open-pit copper mine in Butte, Montana. The group identified valuable compounds from the fungus living in this toxic waste dump filled with highly acidic and metal-heavy sludge, and they published some 20 papers about their findings. Some of these molecules they found inhibited specific pathways of cancer, including leukemia and melanoma cancer cells and non-small cell lung cancer. Others were found to hit targets involved in inflammation or to kill certain bacteria such as Methicillin-resistant *Staphylococcus aureus*. And in China, at the Kunming Institute of Botany, Chinese Academy of Sciences, researchers have

isolated some novel molecules from organisms in tin mine waste streams, including *naphthospironone A*, which has antimicrobial properties.

If not for secondary metabolites identified in soil microbes, we'd be without several reliable anti-cancer drugs, including bleomycin and doxorubicin, antibiotics such as erythromycin and antifungal treatments such as amphotericin B. Secondary metabolites can also come from plants (cocaine, isolated from the coca plant), animals (tetrodotoxin, an antimicrobial found in pufferfish and some salamanders) and mold (like penicillin). Last year, two researchers were awarded the Nobel Prize for isolating a compound from soil samples collected at a golf course in Japan that would later be developed into the drug ivermectin, which is now used to treat parasitic worms. Derivatives of the drug have also helped reduce incidences of elephantiasis and river blindness.

Thorson, who started testing samples in Kentucky in 2012, has identified about 200 molecules that could potentially be useful for drug development. For example, one of the first sets of molecules discovered in his lab helps ensure that the

BIOPROSPECTING: Bacteria grow in Thorson's University of Kentucky lab. His team collects samples from unusual environments, seeking naturally produced compounds that could then be used to develop drugs.

CHARLES BERTRAM/LEXINGTON HERALD-LEADER





protein 4EBP1 continues to repress cell growth in cases when cancers deactivate that functionality. The lab has also identified potential candidates for antibiotic development, and it appears one class of isolated enzymes might be able to make daptomycin—an antibiotic already on the market as Cubicin and used to treat *S. aureus* and other infections—four to eight times more potent.

Thorson says the University of Kentucky looked at him askance when he asked for approval of a budget that included a rock pulverizer and sledgehammer. But on the flip side, geologists working at the university, like Richard Bowersox, have been thrilled to join the project. “This is a fishing expedition,” says Bowersox, adding that the project has allowed him to think about his work in a new and exciting way. In an expedition last year, the geologists were drilling down for their own purposes of surveying a mine, and they collected samples for Thorson every 100 feet below the surface. The geologists have provided Thorson’s lab with specimens from as deep as 4,835 feet below ground.

In general, Thorson’s team has found the deeper one goes into a coal mine, the more interesting the molecules. This may be because the farther down you go the higher the saline content, since some of the areas explored through deep drilling were ocean beds a long time ago. Thorson has tested samples in his lab that had saline levels 10 times higher than the ocean. The coal fire sites have also provided some promising molecules due to their extreme temperatures that can rise to as high as 500 degrees. That heat appears to produce more exotic microorganisms; for example, the team isolated molecules from a bacteria found in a coal fire site that may provide neuroprotective benefits useful for treating the long-term effects of alcohol damage.

Scientists have been discovering curative secondary metabolites for centuries, as far back as 2600 B.C. in Mesopotamia. But it’s only recently that the field has exploded. In fact, in the 1990s, drug companies wanted out of natural product development partly because its returns were slow and relied too much on serendipity. The tools used in labs to sift through these compounds also were not advanced enough. “Part of the reason why the pharmaceutical industry got out of the natural product [development] is they kept rediscovering the same molecules over and over,” says Richard Baltz, chief scientific officer at CognoGen Biotechnology. “All the things that were easy to find were already found.”

Today, though, advances such as cheaper genome sequencing are prompting more interest in natural product development from big

pharma. Labs like Thorson’s can use DNA sequencing to sift through thousands of molecules for the ones that are most interesting. That’s essential, because a single gram of soil can contain up to a million microbes, and each microbe produces hundreds to thousands of secondary metabolites. Thanks to improving technology, Baltz says that the pharmaceutical industry is headed for the golden age of natural product development. “This is going to revitalize the whole pharma industry particularly for antibacterial, antifungal [and] cancer immunotherapies,” he says.

Pharma may be on the rise, but Kentucky’s coal market is flailing and doesn’t look primed for recovery. Miners in the state struggle to hold onto their jobs; in 2013 alone, employment at coal mines fell by nearly 16 percent, and more

“THIS IS GOING TO REVITALIZE THE WHOLE PHARMA INDUSTRY.”

and more states and countries are actively weaning themselves off fossil fuel energy. On January 15, U.S. Interior Secretary Sally Jewell announced the government would stop approving new coal mining leases on public land, and it will consider additional measures to slow down coal extraction in the country. But Thorson’s work is at the very least bringing a sense of optimism to those in the mining industry. “It is my hope that a share of any future revenue deriving from our discoveries would ultimately go back to the site owner and/or local community,” he says. Paul Horn, president and chief operating officer at Booth Energy, which runs the Matrix mine, wonders if natural drug discovery might be a reason to keep on drilling long-term—but for now he’s happy to let any researcher simply collect some dirt. “It’s pretty neat because a lot of people think coal is bad or dirty,” he says. “Who wouldn’t want to help cure something?” **N**



IN THE REEDS

New imaging technologies are revealing the secrets of ancient Egyptian scrolls

“USUALLY, in this area, no visitor gets in,” Verena Lepper tells me on a gray Friday morning in Berlin. She gently closed a set of double doors behind us, careful not to create any vibrations in the walls. We were standing in a room that was white from floor to ceiling, without a single scuff. It felt more like an airlock on a spaceship than a vestibule in the city’s Archaeological Center, completed just four years ago. There, I would sign my third guestbook of the day.

The procedure was not just a German reflex for meticulous record-keeping but also a security policy: Inside was the nation’s largest collection of papyri, among the four largest in the world, two floors crammed with scrolls that were pressed between glass and tucked away in metal drawers. Although academics hesitate to put a price tag on research material they consider priceless, any one of these scraps of paper would sell for thousands of dollars on the antiquities market.

Among the manuscripts was a section of *The Ahiqar*, a proverb-loaded narrative about a betrayed chancellor of the Assyrian King Sennacherib. The 2,500-year-old text was written in Aramaic, the language Jesus spoke, and one of the 15 that Lepper, a curator at the Egyptian Museum and Papyrus Collection in Berlin, knows herself. “Literary studies people claim this is the first novel ever to be written,” she says. But for Lepper what is most interesting about this first copy of *The Ahiqar* is where it came

from: Elephantine Island, a narrow patch of land less than a square mile large in the middle of the Nile River, opposite Aswan in southern Egypt.

The hundreds of documents that have turned up at Elephantine include 10 different languages and range across four continuous millennia, from Egypt’s Old Kingdom around 2500 B.C. to the Middle Ages. “I’m not aware of any other place in the world where you have 4,000 years covered by textual resources from one single place,” Lepper says. And yet most of the texts from the island haven’t been studied or published—and many haven’t even been unfurled because they’re so delicate.

To make a paper-like sheet of papyrus, thin strips of the pith from inside the stems of reedy papyrus plants were sliced and arranged in overlapping, perpendicular layers. No glue was necessary; the plant’s natural stickiness fused the fibers together. Like all organic material, papyrus tends to rot when exposed to oxygen and moisture, but when it’s buried in dry climates like Egypt’s, it has a better chance of survival.

Still, the scrolls archaeologists find aren’t always in great shape. Some from Elephantine are still intricately folded with layers that might be brittle or stuck together—scholars of the past would pry them open anyway, at risk of destroying the fragile documents. But thanks to advanced imaging technology—and a \$1.6 million grant from the European Research Coun-



BY
MEGAN GANNON
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RED-HOT PROSE: A papyrus scroll from Herculaneum, carbonized in the eruption of Mount Vesuvius, undergoes part of the CT scan process to help decipher the writing contained within.

cil—Lepper will be able to read papyrus scrolls from the island that have never been unrolled. Over the next five years, she'll be working with physicists and mathematicians to extract hidden words, letter by letter, with high-energy beams.

Located at the first cataract of the Nile, Elephantine was strategically important and marked the southern border of Egypt throughout much of ancient history. Pharaohs fortified the island and filled it with soldiers. The outpost became an economic hub too, where goods like Nubian gold, ivory, exotic animals and ostrich feathers flowed to the rest of Egypt. Typically teeming with mercenaries and traders, Elephantine was surprisingly diverse for its size. Polytheistic Egyptian worshippers likely walked to the temple of the ram-headed god Khnum alongside Aramaic Jewish soldiers going to their own temple next door. There was intermingling, too: texts from the island reveal examples of Coptic Christians converting to Islam and Egyptians converting to Judaism.

"You have all these kinds of first hints of what might be called a multicultural and multireligious society," Lepper says.

Elephantine eventually outgrew its digs;

settlers spilled over to Syene (now Aswan) on the eastern bank of the Nile, and as this city grew Elephantine waned in importance. The ruins of Elephantine were not necessarily forgotten. (The island's ancient Nilometer—a device used to measure the flooding of the Nile—was used until the 1800s.) But it lacked sprawling monuments and gold treasures, so early archaeologists bypassed Elephantine, says Johanna Sigl of the German Archaeological Institute in Cairo. Then, in the late 19th century, farmers collecting the island's ancient mud bricks for fertilizer found troves of papyri.

In the conservation workshop of the Archaeological Center, papyrus conservator Tzulia Siopi motioned to a dull gray metal container slightly longer than a shoe box. On the outside, in white paint, it was labeled "Elephantine" and dated November 12-16, 1907—when German archaeologist Otto Rubensohn and papyrologist Friedrich Zucker filled this box for the Berlin Royal Museums.

Siopi propped open the lid to reveal an assortment of ancient confetti. With a pair of surgical tweezers, she lifted layers of crumpled brown tissue paper, packed with hundreds of papyrus fragments, many barely the size of a fingernail. They were scribbled with text in dead languages like Demotic and Hieratic. The box hadn't been touched in a century. There were still tiny feathers and sand that had blown in from the excavation

"LITERARY STUDIES PEOPLE CLAIM THIS IS THE FIRST NOVEL EVER TO BE WRITTEN."

site. Fifty of these straight-from-the-field metal boxes have languished in storage in Berlin.

To extract the words from fragile scraps like these, conservators have an ever-expanding toolkit. They can use multispectral imaging, where a text is photographed in different wavelengths of light—sometimes ultraviolet and infrared light, which are invisible to the human eye. Because the paper and the ink have different chemical properties, they might reflect certain



wavelengths of light in different ways, which could reveal previously unseen scribbles. That's how researchers discovered two previously unknown treatises by the ancient Greek scientist Archimedes on pages that had been overwritten and reused in a 13th-century prayer book.

Then there's X-ray imaging, borrowed from the medical sciences. Brent Seales, head of the computer science department at the University of Kentucky and a pioneer of digital reconstruction, likens the papyrus scroll to the body of a person going to the doctor for an X-ray: The ink letters are the bones, and the paper surfaces are the soft tissue. When X-rays are blasted at a manuscript, the denser ink leaves a shadow, and, if researchers are lucky these shadows will appear in the shape of legible text.

For looking inside folded texts, researchers have another method inspired by doctors: computed tomography. CT scans take X-ray slices of a papyrus chunk, and these images are stacked together to visualize where the ink blobs lie inside of the scroll. Then a separate challenge looms: reconstructing the way the papyrus was folded, which makes digitally unraveling a text like solving an ancient Rubik's Cube. Each surface of the crumpled scroll must be distinguished and then aligned to form a coherent, readable sheet of text. The sheer amount of data to be processed in this phase of such a project can be staggering. Last year, Seales helped a group of Israeli researchers successfully unravel the Ein Gedi scroll to reveal text from the biblical book of Leviticus. The software he designed had to sort through 10,000 CT slices to make sense of a scroll section just 3 inches long.

These methods all rely on the imaging machines being able to differentiate between ink and paper. Unfortunately, the ink used in antiquity was often carbon-based charcoal—and the difference in X-ray absorption between the pure carbon of the ink and largely carbon organic papyrus is so minor that the contrast between the two is often undetectable. Some scientists have

been trying to combat this problem by searching for alternative methods. Seales recently worked with a group of French and Italian researchers to examine rolled up and charred papyri that were buried inside a luxury villa's library at Herculaneum during the A.D. 79 eruption of Mount Vesuvius. The impossibly delicate scrolls had frustrated antiquarians since the 18th century. But the scientists used a more sensitive variation of CT scanning, called X-ray phase-contrast tomography, which proved refined enough to reveal a few previously hidden sequences of Greek letters. Their initial results made headlines after they were published in January 2015 in the journal *Nature Communications*.

Still in the early stages of the project, Lepper and physicist Heinz-Eberhard Mahnke are creating mock-ups of folded papyrus scrolls to test how they might approach the texts from Elephantine. They're also looking for a specialist with math and computer science skills to help develop algorithms that might be able to automatically pick out letters and help piece together fragments of papyrus surfaces.

The ancient texts preserved at Elephantine range from literary works like *The Ahiqar* to marriage contracts, divorce documents, lists of donors to the Jewish temple, everyday letters and ancient beer receipts. What survived is mostly a matter of

THE SOFTWARE HAD TO SORT THROUGH 10,000 CT SLICES TO MAKE SENSE OF A SCROLL SECTION JUST 3 INCHES LONG.

luck. And yet Lepper hopes to make sense of this 4,000-year written record by focusing on a few themes: She's looking for texts that shed light on the role of women, and she wants to understand how Elephantine managed such a diverse population in such a small geographic area.

By 2020, Lepper wants to create an online database that brings together not only the texts she can virtually unroll but also each of the thousands of written scraps from the island, which today are spread across 60 institutions around the world. It's her hope that dumping all the data online will help future researchers draw their own connections. "It's been my dream to bring all of these pieces together and try to let them speak," she says. ■

Newsweek

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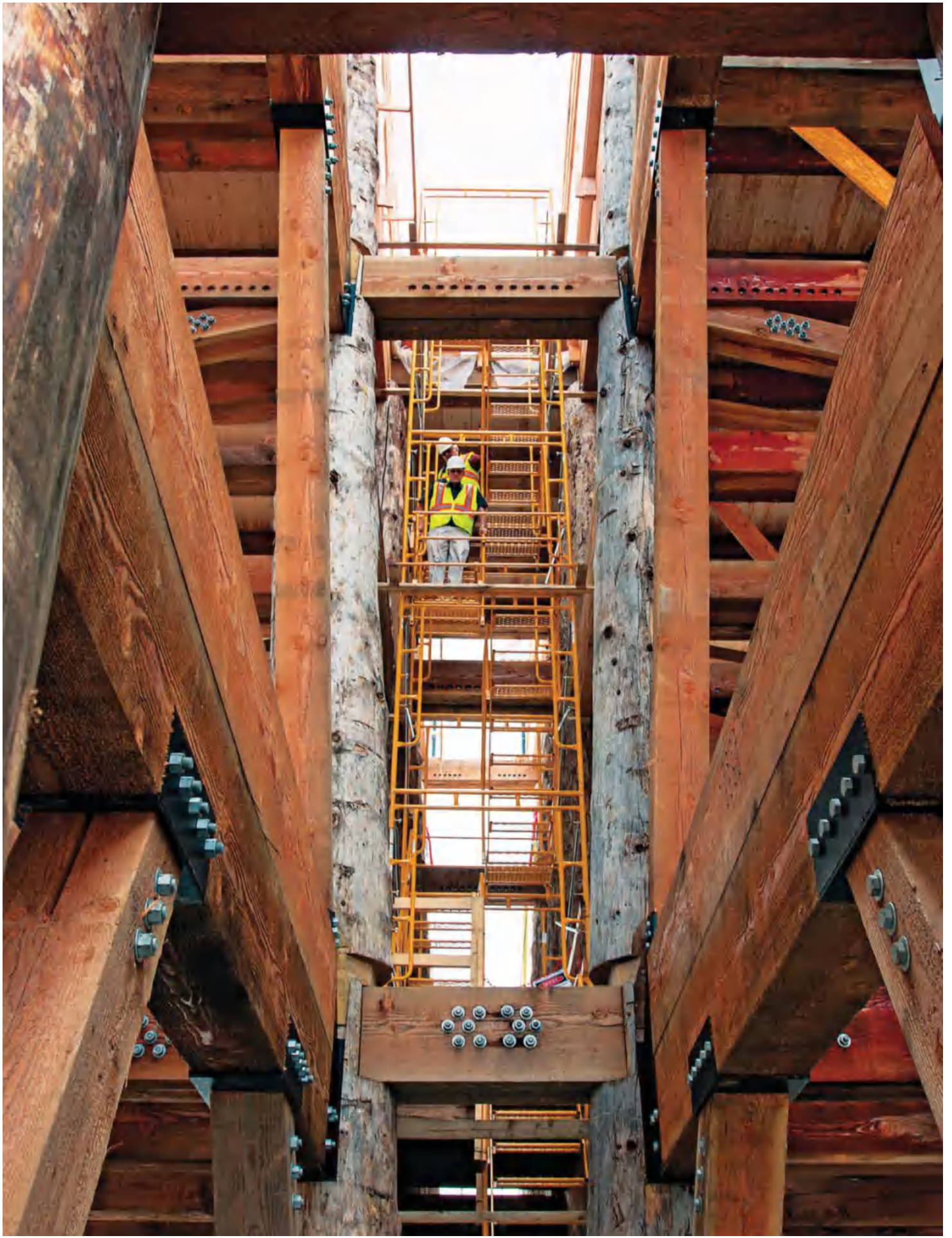
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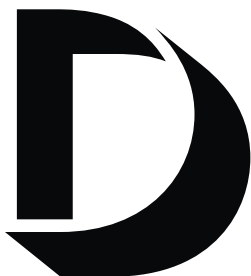
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LIONS AND DINOS AND LAWSUITS, OH MY

Evangelical extremists are taking taxpayers for a ride on a \$101 million boat that don't float

+ ALL ARK, NO BITE: The view from the first floor up to the third floor of the to-scale Noah's Ark replica, at the Ark Encounter theme park in Williamstown, Kentucky.

IMAGINE THE *Titanic* minus the smokestacks, framed out of timber rather than iron. Imagine that instead of a doomed ocean liner bustling with well-dressed elites, it's home to 2,000 sea-sick animals, a handful of teenage dinosaurs and one patriarchal family headed by a 500-year-old man bent on saving the world. Cultures all over the globe share the legend of Noah's Ark, but this summer one especially enthusiastic Christian ministry will try to convince you that it looked exactly like this—dinosaurs and all—when the organization opens its biblical theme park. Its pièce de résistance is a 510-foot representation of Noah's giant boat. (OK, the *Titanic* was bigger, but you get the idea.) Tickets for the July 7 opening went on sale January 19, and the ministry folks are betting big—with borrowed money—that people will want to see the show.

The masterminds behind this monument to

theological devotion are fundamentalist Christian organization Answers in Genesis (AiG) and its Australian-born president, Ken Ham. For the unfamiliar, Ham, AiG and their followers believe in a literal interpretation of the Bible and disparage anyone who doesn't. Dubbed the Young Earth Creationists, they maintain that the Earth and its universe were created 6,000 years ago in six days, as described in Scripture. And while they argue that their worldview deserves as much classroom time in public schools as science, for now they are focused on molding young minds through their oft-mocked Petersburg, Kentucky, Creation Museum and the forthcoming Ark Encounter theme park in nearby Williamstown. By AiG's calculations, dinosaurs and humans roamed the planet in harmony because God said in Genesis that all the animals were made in one day, which seems to indicate that they were

BY
LINDSAY TUCKER
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made simultaneously. Ergo, dinos on the ark.

Despite many competitive advantages, including buying a 99-acre parcel of land from the city for a mere dollar, the \$101 million project has been plagued for five years by setbacks that include a lack of public support, unfruitful fundraising efforts and a bitter lawsuit over \$18 million in tax incentives that the state withheld due to church-state separation concerns. But none of this has discouraged Ham, who says that his ark could draw as many as 2 million visitors in its first year, although such projections are highly disputed.

Last month, I flew to Kentucky to meet Ham and tour the ark site and AiG's design studio. The ark—which is still being built at the end of a very long, carefully guarded dirt road with a sign marked “Danger... Keep out”—is hidden from public scrutiny, and for good reason. In order to incentivize building there, Williamstown declared the ark site and the surrounding 1.25 miles a tax increment financing (TIF) district, which is a fancy way of saying that over the next 30 years, 75 percent of sales and real estate taxes generated within the area will go back to fund Ark Encounter. There's also an employment tax for workers in the district, but more on that shortly.

Ham didn't stand up when an assistant shuffled me into his office one Friday afternoon. He has a reputation for deceitfulness and has railed against the media time and time again for, he says, *falsely* claiming that taxpayer money is going toward building the ark. When he speaks, he does so slowly, his words even and calculated. “No Kentucky taxpayer money is going to build the Ark Encounter,” he tells me. Several times.

Ham is telling the truth, but it's a literal interpretation of the truth. The money used to build Ark Encounter came from donations of almost \$30 million, plus \$62 million in high-risk, unrated municipal bonds backed by the project's future revenues. If Ark Encounter never makes significant profits (and bond documents warn that it may not), neither the city nor AiG is on the hook for the bond money. However, according to Mike Zovath, chief actions officer for AiG and Ark Encounter, the millions in tax dollars that will be rebated through the formation of the aforementioned TIF district could go toward repaying the

bonds and funding future attractions. What neither of them mentioned in conversations with me or in their many blog posts on the subject is that, as part of the TIF agreement, employees working within the TIF district will be subject to a 2 percent employment tax on gross wages for the next 30 years. In other words, \$2 out of every \$100 earned by people working at or around the park will go directly to paying off the attraction. So while tax dollars might not actually have been used to *build* the ark, a boatload that would otherwise go back into the community will instead be used to pay off Ark Encounter's debt.

SALVATION TESTIMONY REQUIRED

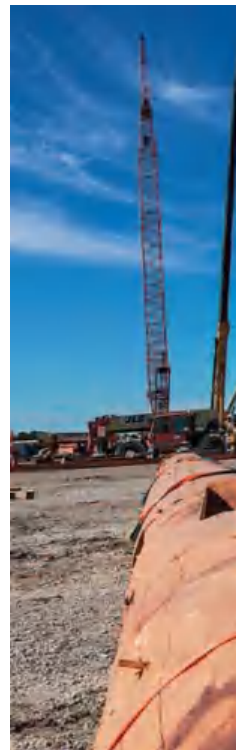
It's a sensory overload inside AiG's 66,000-square-foot warehouse. Roaring power tools, myriad props, Noah-themed inspiration boards, bearded mannequin heads, headless mammal replicas and other menagerie delight and alarm. I saw fawns being cut from foam, faux fur painted by hand, bird cages by the dozen and a *Tyrannosaurus rex* the size of a pit bull. “The ones you see in Hollywood are grandpas and grandmas,” says AiG's director of special projects, LeRoy LaMontagne.

Behind the scenes and running this circus is Vice President of Attractions Designs Patrick Marsh, who worked on the Jaws and King Kong attractions at Universal Studios before joining Ham's operation. “It's really unusual, especially for ministries, to have these capabilities,” he says

I SAW FAWNS BEING CUT FROM FOAM AND A TINY T-REX THE SIZE OF A PIT BULL.

of his work. Marsh considers the lumber, the vintage fabric, computers, a 3-D printer—even the craftspeople—God's blessings. “Travis here, he was just a homeschool kid when I got him right out of high school,” Marsh says of a young designer nearby. “God has provided all of these little miracles along the way.”

WHEN IT CAME TO the \$18.25 million it was seeking in tax rebates, perhaps God came up a bit short of AiG's expectations. Back in 2009, AiG applied for Kentucky's Tourism Development Incentive program. Under the decade-old initiative, eligible



BIG SPLASH:
Though AiG says
tax dollars are not
paying for the ark,
that seems to be
more of a literal
interpretation of
the truth.



attractions that bring in tourism dollars can recover up to 25 percent of costs over a 10-year period through rebated tax money. State tourism officials right away expressed concerns about “separation of church and state issues,” according to documents, but after a series of meetings with AiG representatives the maximum tax rebate was approved for costs incurred through May 2014. The caveat? Ark Encounter would not be permitted to make any hiring decisions on the basis of religion. They reluctantly agreed.

Over the next few years, a series of setbacks stalled construction, and skeptics began to wonder if the park would ever get built. Ultimately, when AiG failed to secure enough private investors, it initiated the \$62 million “junk” bond offering and scaled back the project—eliminating rides and other attractions—to cut costs. These changes, paired with the fact that construction would not begin until after the spring of 2014, required a new application to the incentive program. This time, the application was denied.

Why did the state reject an application nearly

identical to one it initially approved? Because AiG posted Ark Encounter job listings on its website requiring a “salvation testimony” and a creationist statement of faith. AiG insisted that the job posts were not exclusive to Ark Encounter, but state officials remained unconvinced. After months of pleading with the tourism cabinet, AiG filed a lawsuit against Kentucky officials, asserting that the refusal to extend tax aid was a form of religious discrimination.

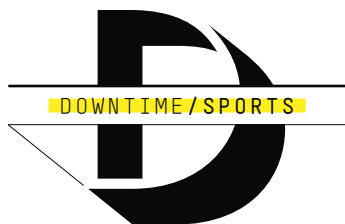
When I asked AiG general counsel John Pence about the company’s revoked promise of non-discriminatory hiring, he referred me to the Civil Rights Act of 1964. “That allows religious organizations to discriminate in hiring,” he says. “If you can’t hire religious people for a religious organization, you can’t function as a religious organization.”

But should taxpayers have to pay for that discrimination? Even Williamstown Mayor Rick Skinner, who has been criticized for being overly optimistic about the ark project, says no. “I don’t think they can do that and expect to get the tourism rebate from the state,” he tells *Newsweek*.

“AiG is confusing what they have the right to do as a private organization with what taxpayers are required to fund,” says Greg Lipper, senior litigation counsel for Americans United for Separation of Church and State. “They’re saying Kentucky taxpayers should pay for them to expand a religious ministry. That kind of argument would make Thomas Jefferson turn in his grave.”

Kentucky Governor Matt Bevin, who took office last month, has said he supports tax rebates for the project, but both Bevin and the Kentucky Tourism, Arts and Heritage Cabinet declined to comment on this story.

There’s more than just public money at stake. Other Ark Encounter attractions will reportedly include a petting zoo, a first-century village and so-called “teaching exhibits” with titles like “Flood Geology” (how marine fossils found on mountaintops “are a direct result of the flood”). Famed scientist and educator Bill Nye, who came under fire from some scientists in 2014 for dueling with Ham in a televised evolution vs. creationism debate, warns that using commonwealth dollars to suppress science is bad for the whole country. “Raising a generation of young people who are confused about the natural history of the Earth is not in our best interest,” he says. “This project is going to slow the response of voters in the Commonwealth to climate change, and it’s going to hold us all back.” Given the way AiG rejects scientific evidence, he thinks it might not be so bad if the ark park goes the way of the *Titanic*. ■



RECORD BREAKERS WERE MADE TO BE BROKEN

Connor Halliday was a lock for the NFL, until he found all the doors locked

"I DON'T KNOW what comes next."

Connor Halliday sits in front of the fireplace at his mother's home in the leafy South Hill neighborhood of Spokane, Washington. Outside, the world is blanketed in a white sea of serenity, the aftermath of an overnight snowfall. Inside the two-story dwelling, the former Washington State quarterback, the holder of three NCAA passing records, is restive.

Despite everything he has accomplished on a football field, Connor Halliday is just another 23-year-old college grad back living with his mom and looking for a job. "It's very stressful," says Halliday, "when you have to be someone you're not used to being."

He will not miss 2015. During last spring's NFL draft, Halliday, who was recovering from a major injury, did not hear his name called. Then, after the Washington Redskins signed him to a free agent deal, he ditched rookie camp. Vanished. Played golf "until the money ran out." Got married. Was signed by a Canadian Football League team and then cut a day later. Got dumped by his wife.

"I had a second interview with an advertising agency the other day," the handsome, auburn-haired Halliday says. "The interviewer made a big deal about being a leader in the classroom. I told him that my major was leading an offense. That every decision I made in college was designed to get me to the NFL."

Two full months into the 2014 season, Halliday was leading the nation in passing (430 yards per game) by a robust 60-yards-per-game margin. Through eight games he was on pace to have the most prolific single-season passing total in NCAA history. On October 4, 2014, he passed for more yards (734) in one contest than anyone in the history of college football.

Despite being overshadowed by fellow Pac-12 conference quarterback Marcus Mariota of Oregon, who would win the Heisman Trophy, Halliday's GPS coordinates were known to most NFL scouts—more than two dozen made pilgrimages to Pullman, Washington, to see him. Most assured him he was anywhere from a fourth- to fifth-round pick, which meant a signing bonus of between \$1.3 million to \$2.2 million. (It's actually closer to half that.) "I called a friend of mine who works at an auto dealership in Spokane," says Halliday, whose father, Duane, played quarterback at Boise State. "I told him when I got my signing bonus, I wanted a white BMW 760 with 20-inch rims."

Three games later, it was over. Halliday broke his fibula and tibia while completing a pass against the University of Southern California, ending his collegiate career.

Halliday has etched his name more than once in the NCAA record book—he also set marks for most completions in a single game, 58, and most attempts, 89. His name is nowhere to be found on an NFL—or even CFL—roster. Will it ever be?

BY
JOHN WALTERS
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HIDDEN GAME: Halliday's bad breaks in football—injuries, setbacks—always preceded lucky ones. Until he walked out on his NFL dreams.

"I am disappointed that I'm one of those stories," says Halliday. "Do you know Connor Halliday? He had all the talent in the world, but it just didn't work out for him."

NOVEMBER 1, 2014, began a raw, misty afternoon in Pullman. "Crappy weather, the stadium was empty, and we weren't ready to play," says Halliday.

The Cougars trailed Southern Cal 14-0 midway through the first quarter when Halliday took the shotgun snap on third-and-6 from the Cougars' 23-yard line. He shaded left, completing a 14-yard pass off his back leg. He twisted to avoid the Tro-

jans' 290-pound All-American defensive tackle Leonard Williams, who was falling toward his knees. "I was wearing leggings, so I couldn't see the bone sticking out," says Halliday, whose lower limb snapped under the weight of Williams. "As soon as I lifted my right leg, I started screaming."

A team physician leaned over Halliday's prone form. "Yeah, compound fracture," he diagnosed. "Tib-fib."

Halliday moaned. "Why?" he said. "Why? Why?"

"It all set in immediately," he recalls. "Twenty-two years of work, and I was three weeks away from my lifelong dream of playing in the NFL."

THREW IT AWAY: Halliday, playing for the Washington State Cougars, passes against the Rutgers Scarlet Knights in an August 2014 game in Seattle.

+



OTTO GREULE JR./GETTY



The money was at the end of the tunnel. And I realized that it was all over for me.”

Three weeks earlier, California had visited Washington State. On the bus ride to the stadium, Halliday asked his coach, Mike Leach, which player held the record for most passing yards in a game. Leach, who has coached four quarterbacks who led the nation in passing, replied, “Are you fucking kidding me? You shouldn’t be worrying about that.” “Well, I’m gonna break it,” said Halliday, and damned if he did not. Halliday completed 49 of 70 passes against the Golden Bears for 734 yards, six touchdowns and zero interceptions. The game, which was only televised regionally, was a genuine Wild West shootout, as Cal quarterback Jared Goff threw for more than 500 yards and five touchdowns.

Both teams scored 28 points in the third quarter. They exchanged the lead four times in the fourth quarter. Finally, with Wazzu trailing 60-59, Halliday led the Cougars to the Cal 1-yard line with time enough, perhaps, for two plays. “I figured, I’m going to call timeout,” says Halliday. “We can’t miss this field goal.”

They did. Shanked left, from 19 yards out. After the most prolific passing game in college football history, Connor Halliday finished 1 yard shy of satisfaction. Who even knew? “Goff and I combined for 11 touchdown passes and no picks and the game got 7 seconds on [ESPN] *SportsCenter*,” says Halliday. “If that game gets remembered at all, it’ll be for a missed game-winning 19-yard field goal.”

Goff, meanwhile, will almost certainly be the first quarterback taken in next spring’s NFL draft. “It pisses me off some,” says Halliday, “because before the injury, I am Jared Goff.”

The oldest of three children and the only son of Duane and Jessica Halliday (since divorced), Connor’s devotion to sports dates back to his first word (“*ba*,” for ball). He was a gifted athlete and an industrious pupil of the quarterback position. “I could always throw the ball farther than anybody,” says Halliday, “but I’d also come home from school and work on my footwork for two hours so that I wouldn’t mess up at practice that night.”

Halliday’s meticulous preparation was rewarded in his redshirt freshman year. In his debut, replacing an ineffective senior after one series, Halliday passed for 494 yards in a 37-27 defeat of Arizona State. The following week, he got his first college start against Utah. In the first quarter, Ute linebacker Chaz Walker torpedoed



him in his torso as he released a throw. The pain was so severe—“I thought I’d cracked a rib”—that Halliday needed to have his running back call out the signals on the next few series. But he never came out.

“After the game, they took me to the hospital and told me I’d broken a rib. I told the doctor, ‘I don’t mean to sound like a [wimp], but it feels worse than that.’”

A thorough examination revealed that Halliday had a 9-centimeter laceration of his liver. The hospital staff was incredulous. Such a wound was only seen in gunshot or car accident victims. Halliday spent the next four days in the intensive care unit.

“Connor had mono and an enlarged spleen in high school,” says his mother, an English professor at Gonzaga University. “Our doctor would not grant him a medical release to allow him to play, but we found another one who would. Connor said, ‘I’d rather die than miss this game.’”

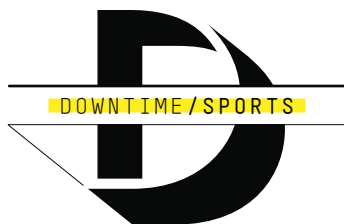
Hence, when Halliday’s right leg snapped like

**“I WAS WEARING LEGGINGS,
SO I COULDN’T SEE THE BONE
STICKING OUT [OF MY LEG].”**

kindling beneath the near-300 pounds of Williams (chosen sixth overall in the 2015 NFL draft), his resolve did not quiver. “The doctors told me I wouldn’t be able to work out until May or June,” says Halliday, who attended the NFL combine in February for team interviews. “I scheduled my pro day”—i.e., a private audition—“for the beginning of April. At that point, I was so dead-set on proving everybody wrong.”

Barely two weeks off crutches, Halliday held his workout for NFL scouts outdoors at Washington State’s Martin Stadium on April 1. Throwing in sub-30 degree temperatures with winds gusting up to 30 miles per hour, he completed 59 of 62 passes. All three misses were drops.

“When it was over, the scout from the Car-



olina Panthers shook my hand and said, 'You made yourself a lot of money today, Connor.' I'll never forget that."

The Redskins had been in touch with Halliday's agent, Peter Schaffer. They informed him that they would likely select Halliday in the sixth round. "I didn't care where I got drafted," says Halliday, who embedded himself in his mom's basement to watch, "I just wanted to hear my name called." It wasn't. Minutes after the 256th and final selection was announced, Halliday turned off his phone. All of those years of preparation. All of those hours of rehab. Where was the reward? "After that, I thought, You've got to be kidding me. Fuck this!" says Halliday. "My mind wasn't in the right place."

At 6-foot-4, 200 pounds, Halliday has NFL size, but as a quarterback in Leach's Air Raid offense, he is partly guilty by association. The four former Leach QBs who led the nation in passing—Cliff Kingsbury, B.J. Symons, Sonny Cumbie and Graham Harrell (twice)—combined to attempt six passes in their NFL careers. The "system quarterback" tag is difficult to shake.

"One scout told me he thought I was one of the top passers in the draft," says Halliday, mindful that the top two overall picks in 2015, Jameis Winston and Mariota, were quarterbacks, "but that being a Leach QB would scare teams off."

He spent nearly two weeks at the Redskins' facility in Ashburn, Virginia, ingesting coach Jay Gruden's playbook. Like a law school grad cramming for the bar exam while his mind is plagued with self-doubts about practicing law, Halliday was easily distracted. Mentally and emotionally, he had tapped out. On the eve of the three-day rookie training camp, he bought a one-way ticket home.

"I felt bad about not telling coach Gruden face-to-face," says Halliday. "But I also felt like they told me that they were going to draft me, and then they didn't."

Halliday's flight out of Dulles International Airport departed before dawn. His cab arrived at 3:45 a.m. As the taxi approached the on-ramp of the highway, a lone vehicle pulled directly in front of it: a BMW 760, just like the one he had dreamt of owning. "It was right in front of us," says Hal-

liday. "Then the driver floored it. He must have been going 100 to 120 miles per hour. And that was my dream disappearing in front of me."

For the first time in memory, Halliday had no routine to follow, no season for which to prepare. A two-handicap golfer, he whiled away most daylight hours at Qualchan golf course in Spokane. "It was nice for three hours a day that I didn't have to think what I was doing with my life," he says.

His agent did, however. "I have a 15-year-old daughter who rides horses," says Schaffer, who is based in Denver. "When she falls off, she gets back up. It comes with the territory."

In September, Schaffer landed Halliday a try-out with the B.C. Lions of the CFL. Halliday also married his childhood sweetheart, partly so that she would have a work visa when they relocated to Vancouver, British Columbia. He spent a day

"THAT WAS MY DREAM DISAPPEARING IN FRONT OF ME."

at the team's facility, watching practice and film. The following morning, before Halliday ever threw a pass, the Lions cut him.

"We had a quarterback go down, and so we decided to bring in Connor," says Lions director of football operations Neil McEvoy. "But then our guy wasn't as badly hurt as we thought."

Halliday's wife moved out two months later. "After I got cut I could tell her feelings changed," he says. "I think she felt that I let us down."

IT IS THE FIRST day of winter. A new season. Halliday looks out the window and contemplates why he walked out on the Redskins. "I was so down, and I felt so little," he says. "I felt so helpless. I have battled through so much, and I have never gotten a reward for this."

He vacillates between a return to football in some form—he helped coach his high school team last autumn—or walking away. "I'm optimistic about Connor's career whatever he chooses," says Schaffer. "We're going 100 mph in both directions. He's a great young man."

The bones are repaired, but there is other healing to do if Halliday is to return to the game he always loved. Connor Halliday has come so far, but he remains 1 yard shy. The game may feel as if it's over, but there is still plenty of time on the clock. He has so many seasons ahead of him. **N**

THE ELEANOR FRIEDBERGER GUIDE TO THE HUDSON VALLEY

The indie songwriter, whose move to upstate New York inspired a new life and new record, shares five of her favorite local spots

AS THE LEAD singer for experimental pop duo the Fiery Furnaces and then a solo artist, Eleanor Friedberger meticulously avoids cliché. But several years ago, she found herself turning into one: an artist priced out of Brooklyn, her home of 14 years. “I think you have to be rich to have a good lifestyle here,” Friedberger says over lunch in New York City. She was tired of rehearsing in windowless, closet-like rooms. “I wanted a certain amount of space and a certain amount of freedom and a certain quality of life that I can’t afford here.”

When some friends of hers got married and built a house in the Hudson Valley, she became intrigued, and at the end of 2013 she made the big move north. “I just stumbled upon this really weird place that I could only have with friends,” Friedberger recalls. “It’s big and sprawling and all these different buildings. So I ended up buying a house with one of my best friends.”

Friedberger’s latest album, *New View*, reflects

this rustic life. Recorded live to tape in a converted barn in Germantown, New York, the music has a twangy charm, miles from the synthesizer opuses she once recorded in the Fiery Furnaces. In that spirit, we asked Friedberger for a guide to the best spots and diversions she’s discovered since moving upstate.

ULTIMATE LUAU ROSENDALE

“This guy’s name is Mark. He’s an artist who makes Tiki sculptures, and he’s created this insane Tiki paradise in his backyard and in his house, where you can see all of his work. He also, on the side, designs sound systems for people’s homes. I’ve never heard any music played like you do at this house. Juxtaposed with the Tiki situation, it’s a completely bizarre place.”

THE MOHONK PRESERVE GARDINER

“I could take a different hike every day for three months and not get bored, which is something I enjoy doing. It’s kind of incredible to just be surrounded by so much—I can’t believe how beautiful it is. I have this extreme reaction every time.”

HALF MOON BOOKS KINGSTON

“Kingston, which is the big city, is making a—I don’t know what you want to call it—come-back, maybe? There’s a really good second-hand bookstore there called Half Moon Books, in the Stockade District. I would recommend that highly. Just the kind of place where there are stacks of books everywhere.”

JACK’S RHYTHMS NEW PALTZ

“There’s a couple of good record stores. My favorite one is Jack’s Rhythms. It’s mostly secondhand vinyl. I bought a Yoko Ono album with a pyramid on the cover—it’s got a really funny title, I can’t think of it—and I bought an INXS record that I loved as a kid called *Listen Like Thieves*.”

MOUNTAIN BRAUHAUS GARDINER

“A restaurant that I love going to is really old-fashioned. It’s called the Mountain Brauhaus. It’s this old German-style restaurant, built in 1955, I think. It’s covered in photographs of mountain climbers. It’s right at the foot of the Minnewaska State Park, so a lot of people go climbing, [then] come here for a giant beer and sausages.”





GOD'S GROCER

To mark a holy year, Pope Francis has opened up his farm and supermarket to the curious and the hungry

VISIT ROME and you're almost guaranteed to return home with memories of fresh pasta, ripe tomatoes and peppery olive oil. Heavenly, right? Well, not quite as divine as this: Pope Francis has turned grocer, and since early 2015, visitors to the city have been able to go to his farm and purchase its produce.

Perched in Rome's southern hills, about an hour's drive from the Vatican, is Castel Gandolfo, the pope's summer residence. The full complex, the Pontifical Villas of Castel Gandolfo, spans 136 acres, of which 62 are used for farming. Much of what Francis eats—from fresh olives to caciotta cheese—comes from this land.

Unlike some of his predecessors, Francis does not appear to be particularly interested in relaxing at the retreat, which features gardens, historic ruins and a swimming pool. (Pope John Paul II installed the pool.) Since the start of Francis's tenure, he has visited just a few times and not once stayed overnight. He opened Castel Gandolfo to visitors in 2014. In October, Antonio Paolucci, the director of the Vatican Museums, reported Francis as saying, "I don't use Castel Gandolfo. Why not let the people enjoy it?"

Francis's open-door policy is now in place across the Catholic world. On March 13, 2015, he announced that a holy year, named the Extraordinary Jubilee of Mercy, would begin on December 8 of that year. In the Catholic tradition, ordinary jubilees are held every 25 to 50 years, while the

pope can convene additional extraordinary ones. The theme of this holy year is mercy. The Vatican has asked that each diocese open a door in one of its churches, cathedrals or shrines to symbolize a holy door, through which the faithful can pass and in doing so participate in the jubilee.

Before the year began, Francis opened another set of doors: those to his pantries. Guests now can wrap up a tour to the Pontifical Villas with a visit to Francis's farm, where they can purchase Vatican produce as if they were at a regular farm shop. Until recently, Vatican food and wine were available only in the state's supermarket, which is off limits to anyone who isn't a diplomat, holy person or Vatican employee.

Every Saturday, locals from the nearby town of Albano Laziale line up to buy the pope's fresh vegetables, fruit, eggs, milk, wine, honey and olive oil. Marked with the label *Fattoria Ville Pontificie*—the farm of the Pontifical Villas—the choicest products include creamy mozzarella, ricotta, stracchino and teardrop-shaped caciocavallo cheeses. It's all organic and of the highest quality.

One of the most popular items among the pope's customers is unpasteurized milk, which comes from his herd of dairy cows. In December 2014, this herd grew with the addition of two donkeys, a gift from the donkey milk company Eurolactis. Francis seemed happy with his new animals—he has acknowledged having a taste

BY
SILVIA MARCHETTI
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TICKET TO RIDE:
The Vatican railway shuttles visitors from the Vatican to the papal summer estate in Castel Gandolfo (black smoke means it's time to get on board).

for fresh donkey milk, which he drank as a child.

“Everything in those orchards and fields is greener, healthier, tastier,” says local resident Gisella Bianchi. “The cattle, donkeys, ostriches, rabbits and hens are free to roam on a wide, lush estate without city pollution. The only bad thing is the smell of stables, which often sweeps through town.”

For tourists, getting to the farm is easy. In September, the Vatican Museums began train service to shuttle visitors between the so-called two Vaticans—St. Peter’s Basilica in the holy city and the Pontifical Villas. The country estate is legally part of the Vatican state.

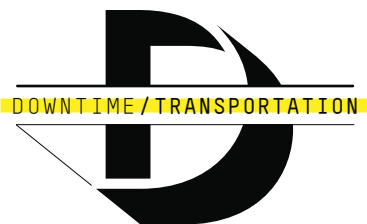
The train departs from the Vatican’s private railway station, a marble building close to the basilica and its famous Michelangelo-designed dome. It chugs along the Vatican railway line—a total of 984 feet of track, making it the shortest national train line in the world. The train then enters Italy and continues to the Pontifical Villas, where a shuttle bus collects travelers and takes them to the estate.

Once in the papal gardens, visitors can take a stroll past the Albanum Domitiani, the ruins of

POPE FRANCIS HAS A TASTE FOR FRESH DONKEY MILK, WHICH HE DRANK AS A CHILD.

Emperor Domitian’s summer residence, which spanned nine miles when it was built. The estate has two gardens, one devoted to roses and the other to magnolias. Amid the woodlands is the farm itself, with its beehives, cattle and fruit trees.

Francis chose his papal name in tribute to St. Francis of Assisi, who is celebrated for his care of animals and concern for nature. The modern-day Francis has in some ways modeled himself after his namesake, writing at length about climate change and suggesting that animals go to heaven. St. Francis would no doubt have approved of his namesake’s decision to share the fruits of his fields. **N**



BUMPY RIDE

Copenhagen's newest bike lane will hang between two skyscrapers—but will locals ever get to ride over it?

IT WILL BE the most spectacular bicycle bridge ever built, stretching between two skyscrapers on the Copenhagen waterfront, high enough for a cruise ship to pass underneath.

But when the Danish capital announced in early January that after eight years of discussion, construction on the bridge would finally begin this year, it raised concerns among urban planners and ordinary citizens. They worried about who exactly it was for: By choosing looks over access, was a city renowned for its dedication to smart urban design trading function for flash? Or was it, once again, proving it deserves its reputation as the most bike-friendly city in the world?

Copenhagen has perhaps the most advanced cycling infrastructure in the world. Surveys show that 45 percent of the population (including 63 percent of Denmark's parliamentarians) commutes by bike daily, a task made easier by the more than 200 miles of bike lanes. Traffic laws and even signals facilitate biking: Lights are coordinated so that cyclists who keep to a steady 12 mph don't have to stop on their way into and through the city. More recently, the city began experimenting with embedded LED displays that signal to cyclists when a bus is about to stop near the bike lane so that passengers can disembark.

As that collision-avoidance measure suggests, cycling in Copenhagen isn't only easy—it's also safe. In the U.S., 44 cyclists are killed per billion kilometers traveled by bike nationwide. In



Denmark, however, there are only 14.6 deaths per billion kilometers traveled—and this in a country that does not require helmets. Much of that improved safety has to do with better infrastructure—bike lanes are raised and separated

BY
LISA ABEND
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BRIDGE GROAN:
Locals worry that
elitism might be
creeping into the
normally egalitarian
bike culture of
Copenhagen.



from automobile traffic, for example. But education also plays a role. Children learn to ride in school—biking has been part of the curriculum since 1947—and many get certified as good cyclists by passing a school test. And as the Organisation for Economic Cooperation and Development reports, more cyclists reduces the risk of accidents, partly because drivers are more aware of them. In Copenhagen, most drivers also own bikes, which makes them more sensitive, the thinking goes, to bike safety.

Private enterprise contributes to the local cycling culture. There are hundreds of bike shops, many of which rent bikes to tourists. All taxis come equipped with bike racks, for those who decide that a sudden turn in weather or a few too many cocktails might make riding home ill-advised. The cargo, or “Christiania” tricycle, was invented here. Cycle Savers, a local startup, allows users to send GPS signals to request a mechanic to come fix a flat tire or broken chain.

But perhaps the biggest sign of the city’s commitment to cycling is its decision to build eight new bike bridges (also open to pedestrians) across its harbor. The now-controversial Copenhagen Gate project at the Marble Pier, the formal name for the high-rise bridge, is one of them. The elevated bridge will unite two new towers containing apartments and offices while still allowing the many cruise ships that dock in the harbor to pass under it. The construction would ensure that the two buildings complied with a municipal policy that requires all residences to be no more than 0.3 miles from public transportation.

American architect Steven Holl won the bidding process in 2008 with an eye-catching design that would require users—bikes and all—to take an elevator up to the bridge and back down to street level. But the global economic crisis prevented the city from moving forward with the project until recently. And then things got really complicated: In November, the development company behind the high-rises requested a new plan that would restrict the bridge’s use to the buildings’ occupants. Morten Kabell, Copenhagen’s mayor for technical and environmental affairs, opposes the change. “The high bridge with public access is what the locals want,” Kabell says. The City Council, however, approved the request, and barring any further changes in design or political temperament, that means most Copenhageners will only be able to look at the bridge, not use it.

Which is why a design already seen by some

as precious is coming under further criticism. “It’s magpie architecture,” says Mikael Colville-Andersen, an urban design expert whose company, Copenhagenize, advises cities on bicycle infrastructure. “You know how magpies are attracted to shiny things? Copenhagen understands the value of big, emblematic architecture. But now everything has changed, and the bridge has become totally nonfunctional.”

It’s not the first time the city has run into trouble with its bicycle bridges. Although the Circle Bridge, designed by Icelandic-Danish artist Olafur Eliasson, opened to much fanfare last summer,

TRAFFIC LIGHTS ARE TIMED TO ALLOW CYCLISTS WHO MAINTAIN A 12 MPH PACE TO TRAVEL THROUGH THE CITY WITHOUT STOPPING.

the Inner Harbor Bridge—a larger project meant to facilitate cyclist commuting by uniting the busy Nyhavn and Christianshavn areas—has been plagued with problems. It was originally scheduled to open in early 2013, but its first financial backer went bankrupt. Once it was back on track, engineers discovered that the bridge’s two sides, which were being built simultaneously from the two shores of the harbor, would not properly meet. Although that problem was eventually resolved and the final connecting piece was installed over the summer, the drawbridge remains unopened while further glitches are ironed out.

Instead of opening its elevated bridge to all cyclists and pedestrians, the company responsible for the Copenhagen Gate has proposed building a second bridge—this one a drawbridge—nearby that would be open to the public. But that one would be of a normal height—hardly as wild a ride.

Which leaves open the question of whether it is worth building the high-rise bridge at all. Although the city has no shortage of gee-whiz architecture—its modern Opera House, Blue Planet Aquarium and Black Diamond library are all stunning—those buildings function for a broad public. And Danes are an unusually pragmatic people. “When you ask people here why they ride bikes,” says Colville-Andersen, “they don’t say they do it for the exercise or for the environment. They say they do it because it’s the fastest way to get from Point A to Point B.” **N**



THE CURATED LIFE

HEAVEN SCENT

Boutique perfumery Ormonde Jayne captures some of the world's most exotic fragrances

WITH HER WHITE lab coat and big strawberry blond hair, Linda Pilkington looks rather like a very glamorous hospital doctor. But Pilkington's way of making people feel an awful lot better is not by healing their bodies but by creating remarkable, mood-improving perfumes. She has just one small boutique, Ormonde Jayne, in London, where half her business is in bespoke fragrances. That is how I got to know her about 10 years ago, when I wandered in looking for a scented candle for Christmas. The fragrance I wanted was in the air already, an ecclesiastical and spicy exercise in olfactory opulence, but the conveyance I wanted was not. At least not for another 48 hours, by which time she had created a pail-sized candle with three wicks. It was a sweet-smelling Christmas.

Since then, I have been a regular visitor to her lacquered jewel box of a shop in Royal Arcade, just off London's Old Bond Street. The combination of smoked-glass mirrors, black walls, subtle gilt metal and orange packaging is what Diana Vreeland and Halston might have come up with had they designed an opium den together.

Fragrances are about as close to abstraction as it is possible for a physical item to be—a series of molecules bound together to interact with the olfactory nerve, evoking something in the brain that is even less concrete than an idea or a thought. It is a sort of sorcery.

Of course, I'm only talking about the good stuff.

No offense to Britney Spears's body mist, the Lynx Effect or even some of the high-end brands that go in for what the marketers call "masstige" fragrances (that's "prestige for the masses"), but it is hard to make an original fragrance that has global appeal. The sense of smell is so personal that it's easier for commercial purposes if the fragrance does not smell too idiosyncratic.

By contrast, Ormonde Jayne fragrances smell of many things. For Pilkington, creating a fragrance is like taking a journey packed with experiences. Hers are so exotic and so powerful that it is odd to think they are made in a laboratory near London's Regent's Park. Going into her shop when she is in residence and being sprayed with clouds of newly devised cocktails to be inhaled rather than imbibed is to take a small holiday. It reminds me of the passage in Joris-Karl Huysmans's *A Rebours* when the protagonist decides to re-create the smells and sensations of travel without leaving his house. Pilkington always seems to have returned from a field trip to some impossibly far-flung plantation, orchard, arboretum or garden to bring back a precious essence.

Most recently, her obsession has been oudh. Also known as oud or agarwood, oudh is a woody aromatic scent long associated with the Middle East and Southeast Asia. But on Pilkington's travels in Thailand, she heard about oudh traders in Nana, the predominantly Arab quarter of Bangkok.

XAVIER YOUNG/ORMONDE JAYNE



BY
NICHOLAS FOULKES

**PERFUME
GENIUS:** For Linda
Pilkington, the
founder of the
London perfum-
ery Ormonde
Jayne, creating a
fragrance is like
taking an expe-
rience-packed
journey.

She manages to make the trip sound like a cross between *Raiders of the Lost Ark* and *A Thousand and One Arabian Nights*. “It was quite amazing, turning from the hubbub of a typical Asian metropolis into a road where almost every person, store and restaurant was Middle Eastern,” she says. “Huge limousines with bodyguards parked outside shops. Inside, the dealers were showing the quality of their oudh in various forms and bartering with buyers from the Gulf over shipments worth many thousands of dollars. The expensive oils were all kept under lock and key in the safe, dried agarwood [the source of oudh] was locked in glass displays, and lower grades of oudh oil made into *agarbattis* [incense sticks] were piled all around.”

Much as I like the tale Pilkington tells of oudh, my favorite of all her scents remains *Orris Noir*: When I am complimented on a fragrance, it tends

BEING SPRAYED WITH CLOUDS OF NEWLY DEvised COCKTAILS TO BE INHALED RATHER THAN IMBIBED IS TO TAKE A SMALL HOLIDAY.

to be *Orris Noir* that I am wearing. Like many of her signature fragrances, it is named after its key ingredient: the purple-black iris flower.

Another, *Champaca*, happens to be a small orange wildflower from India. *Sampaquita*, a species of jasmine, is the national flower of the Philippines. *Ta’if*, inspired by an Arabian rose, is cultivated in the Saudi city of the same name at an altitude of more than 6,000 feet. Tolu takes its name from the resin harvested from a South American tree. And then in an inspired touch, these oils are blended with geographically compatible ingredients. So the dates and orange blossom you might be able to detect in *Ta’if* refer to the things that rose growers in that part of the world like to eat.

You would not, however, want to ingest the ingredients of *Ormonde Man*, one of which is hemlock. Having smelled and enjoyed *Ormonde Man*, I am happy to take it on trust that the poison Socrates was forced to drink after being sentenced to death by a jury of his fellow Athenians smells a lot better than it tastes. **N**

REWIND

25
YEARS



JANUARY 28, 1991

IN "A POSTWAR AGENDA"
BY HENRY KISSINGER

“When I first heard that the war had begun, I thought of President Bush. In a movie, people run around during a crisis, picking up telephones

and yelling instructions. In a real crisis, the top people are very much alone. Many officials head for the foxholes, occasionally throwing out memoranda designed to absolve them of responsibility for their actions.”